



REF

27

LIBRARY
MINISTRY OF
NATURAL
RESOURCES

ONTARIO GAME AND FISH COMMISSION.

COMMISSIONERS' REPORT.

PRINTED BY ORDER OF THE LEGISLATIVE ASSEMBLY.



TORONTO:
PRINTED BY WARWICK & SONS, 68 AND 70 FRONT STREET WEST,
1892.

HAMILTON, 1st February, 1892.

The Honourable

J. M. GIBSON, Q.C., M.P.P.,

Secretary for the Province of Ontario.

SIR,—I have the honour to transmit herewith, for presentation to His Honour the Lieutenant-Governor, the report of the Commissioners appointed to collect information upon the Game and Fish of the Province of Ontario, and the laws relating to their protection.

I have the honour to be, Sir,

Your most obedient servant,

G. A. MACCALLUM,

Chairman.

REPORT
OF THE
COMMISSIONERS
APPOINTED TO COLLECT INFORMATION UPON THE
GAME AND FISH
OF THE PROVINCE OF ONTARIO.

To The Honourable

SIR ALEXANDER CAMPBELL, K.C.M.G.,

Lieutenant-Governor for the Province of Ontario.

May it please your Honour.

The undersigned, appointed by Commission under the Great Seal of the Province, bearing date the thirteenth day of November, A.D. 1890, to make enquiries, take evidence, and report generally, upon the game and fish of the Province of Ontario, and the laws relating to their protection, beg leave herewith to submit their report.

The Commission directs that the investigation shall include the following particulars:—

(1) The advisability of dividing the Province into districts for fish and game protection purposes, with appropriate close seasons for such districts respectively, suggesting what in such cases would be the proper close seasons for each of said districts, or, in the event of a district system not being thought advisable, suggesting what, if any, changes in the present close seasons may be thought necessary or advisable, making special reference to the spring shooting of game or any class or classes thereof.

(2) As to how far the deer of the Province are in danger of extermination under the existing laws ; the approximate number still remaining and where found in different parts of the Province, with such suggestions of a practical nature as may be thought advisable, having special regard to more effective protection of that animal.

(3) Such reference to the game laws of neighboring States in the union as may have a bearing upon the interests of game or fish protection in this Province.

It is further recommended that the Commissioners have conferred upon them the powers of receiving evidence under oath and summoning and compelling the attendance of witnesses, as provided by the "Act Respecting Enquiries Concerning Public Matters," Cap. 17, R.S.O., 1887.

It is further recommended that the Commissioners hold general meetings of the Commission at such times only as may be thought useful and necessary for furthering the prosecution of the enquiries, the consideration of recommendations and settlement of their report ; and that for the purpose of facilitating and expediting their work they may be given authority to sub-divide among themselves the various branches or subjects of enquiry embraced in the scope of the Commission, and to take evidence at different localities in the Province by means of sub-committees as may be found convenient and as may be approved of from time to time by the Provincial Secretary ; that, in addition to the taking of evidence under oath or by declarations, the Commissioners may collect information in the shape of replies to letters and circulars of enquiry.

COPY of the Order in Council approved by His Honour, the Lieutenant-Governor,
the 13th day of November, A.D. 1890.

The Committee of Council have had under consideration the annexed report of the Honourable the Provincial Secretary recommending the appointment of a Commission to make enquiries, take evidence and report generally upon the Game and Fish of the Province of Ontario, and the laws relating to their protection and advise that the said report be acted upon.

The Committee further advise that your Honour, by the Commission confer upon the Commissioners the powers authorised by R.S.O. Cap. 17.

Certified,

(Signed) J. LONSDALE CAPREOL,
Ass't Clerk, Executive Council.

TORONTO, October 31st, 1890.

In pursuance of the recommendation of the select committee of the House at the last session of the Legislature, appointed for the purpose of considering certain proposed amendments of the Game Laws of the Province, and in deference to suggestions from various quarters calling for a more effective protection of the fish of the Province, the undersigned begs to recommend that His Honour the Lieutenant-Governor be advised to issue a Royal Commission directed to:—

Richard Allan Lucas, of the city of Hamilton, in the county of Wentworth, merchant ;

Robt. G. Hervey, of the town of Brockville, in the county of Hastings, railway manager ;

John H. Wilmott, of Beaumaris, in the district of Muskoka ;

G. A. MacCallum, of Dunnville, in the county of Haldimand, physician ;

Walter S. Pulford, of Leamington, in the county of Essex, carriage manufacturer ;

John Mitchell, of the city of Guelph, in the county of Wellington, accountant ;

Alex. H. Taylor, of the city of Ottawa, in the county of Carleton ;

A. D. Stewart, of the city of Hamilton, in the county of Wentworth, agent ;

H. K. Smith, of the city of Belleville, in the county of Hastings, photographer ;

*E. W. Thomson, of the city of Toronto, in the county of York, journalist ;
Authorizing them to make enquiries, take evidence and report generally upon the game and fish of the Province of Ontario and the laws relating to their protection ; and that they be instructed to report specially upon the following matters :—

1. The advisability of dividing the Province into districts for Fish or Game protection purposes, with appropriate close seasons for such districts respectively, suggesting what, in such cases would be the proper close seasons for each of said districts, or, in the event of a district system not being thought advisable, suggesting what, if any, changes in the present close seasons may be thought necessary or advisable, making special reference to the spring shooting of game or any class or classes thereof.

2. As to how far the deer of the Province are in danger of extermination under the existing laws, the approximate number still remaining and where found in different parts of the Province, with such suggestions of a practical nature as

*NOTE.—Mr. Thomson resigned his position on the Commission shortly after the work was commenced, on account of removal from Toronto to Boston.

may be thought advisable, having special regard to more effective protection of that animal.

3. Such references to the game laws of neighboring states in the Union as may have a bearing upon the interests of Game or Fish protection in this Province.

It is further recommended that the Commissioners have conferred upon them the powers of receiving evidence under oath and summoning and compelling the attendance of witnesses, as provided by "The Act Respecting Enquiries Concerning Public Matters." Cap. 17, R.S.O., 1887.

It is further recommended that the Commissioners hold general meetings of the Commission at such times only as may be thought useful and necessary for furthering the prosecution of the enquiries, the consideration of recommendations, and settlement of their report; and that for the purpose of facilitating and expediting their work they be given authority to sub-divide among themselves the various branches or subjects of enquiry embraced in the scope of the Commission and to take evidence at different localities in the Province by means of sub-committees as may be found convenient, and as may be approved of from time to time by the Provincial Secretary; that, in addition to the taking of evidence under oath or by declarations, the Commissioners may collect information in the shape of replies to letters and circulars of enquiry.

It is further recommended that the remuneration of the Commissioners shall be \$5 per diem and expenses while actually engaged in the prosecution of the enquiry.

It is further recommended that the said G. A. MacCallum be appointed chairman, and A. D. Stewart Secretary of the Commission.

(Signed)

J. M. GIBSON,

Provincial Secretary.

Your Commissioners met in Toronto on the 10th Dec., 1890, to consider what means should be taken to satisfactorily discharge the important duties devolving upon them.

Your Commissioners were addressed by the Hon. J. M. Gibson, Provincial Secretary, and by the Chairman of the Board, both gentlemen outlining shortly the nature of the work to be undertaken, and suggesting methods by which it should be carried out.

After a full discussion it was decided, for the purposes of the Commission, to divide the Province into districts, so as to enable your Commissioners to sit in sections for the purpose of taking evidence throughout Ontario.

The following sub-divisions were then agreed upon:—

DISTRICT No. 1.—All east of western line of Lennox and Addington, and all east of westerly line of Renfrew, protracted through to the Ottawa river.

DISTRICT No. 2.—To embrace all north of a line drawn from Kincardine to north-west corner of Lennox and Addington.

DISTRICT No. 3.—All south of district No. 2 and east of a line drawn from Hamilton to Collingwood as far east as district No. 1.

DISTRICT No. 4.—All west of a line drawn from Hamilton to Collingwood, and south of district No. 2.

A sub-committee was assigned to each of the above districts, as follows:—

DISTRICT No. 1.—Messrs. Hervey, Smith, Taylor, Stewart.

DISTRICT No. 2.—Messrs. Wilmott, Thomson, Pulford, Stewart.

DISTRICT No. 3.—Messrs. Mitchell, Thomson, Smith, Stewart.

DISTRICT No. 4.—Messrs. MacCallum, Pulford, Lucas, Stewart.

In order that evidence might be systematically received, not only from such witnesses as might from time to time present themselves for examination before your Commissioners, but from practical sportsmen and others who might not be able to attend these meetings, the following list of questions were carefully prepared.

Return this form when filled up to A. D. Stewart, Secretary Ontario Game and Fish Commission, Court House, Hamilton, Ont.

ONTARIO FISH AND GAME COMMISSION.

QUESTIONS RELATING TO DEER.

Name and Address of Witness.

Mr.

Occupation

Address

Post Office

County

1. What persons of your acquaintance can give information about deer ?

Answer—

Mr.	P.O.	County
Mr.	P.O.	County
Mr.	P.O.	County
Mr.	P.O.	County
Mr.	P.O.	County
Mr.	P.O.	County

2. What deer hunting districts are you familiar with ?

Answer—County

“

“

“

“

3. About what time of the year do does produce their young ?

Answer—Month of

4. Should does be hunted while carrying their young ?

Answer—

5. How many does have you seen with one buck after the rutting season ?

Answer—

6. About what time of year does the herding or yarding season begin ?

Answer—Month

7. About what time in spring do the bucks leave the does ?

Answer—Month of

8. What time or in what weather does the rutting season usually begin ?

Answer—

9. How long does the rutting season usually continue ?

Answer—Till

10. How many fawns does a doe commonly bring forth at one birth ?

Answer—Number.

11. Are bucks and does in good condition for human food during the rutting season ?

Answer—

12. At what age do young does first take the buck ?

Answer—

13. What is the dressed weight of a yearling unskinned ?

Answer—

14. Should the killing of fawns or deer of less than that weight be forbidden ?

Answer—

15. At what time of year are bucks in best condition for human food ?

Answer—

16. Are does then in prime condition ?

Answer—

17. Should deer-killing be entirely prohibited for a term of years, and, if so, for how long ?

Answer—

18. Should the hounding of deer be forbidden ?

Answer—

19. State your reasons for foregoing answer.

Answer—

20. Should runaway shooting before hounds be forbidden ? If so, why ?

Answer—

21. Should deer be allowed to be killed in the water ?

Answer—

22. State your reasons for foregoing answer.

Answer—

23. Do summer fishing or camping parties often destroy deer ?

Answer—

24. By what illegal means are deer often destroyed ?

Answer—

25. Is crust hunting much practiced ? If so, by what classes ?

Answer—

26. Is summer " Marsh " or " Jack-light " hunting much practiced ? If so by what classes ?

Answer—

27. In what districts of Ontario were deer formerly numerous to your own knowledge ?

Answer—

28. Are they numerous there now ?

Answer—

29. If not, what has caused the scarcity ?

Answer—

30. The law now allows 5 deer per season to one hunter, 8 to a party of two, 12 to a party of three, and no more than 12 to any party, no matter how numerous. Should this provision be changed ? If so, in what respects ? And what are your reasons for the answer ?

Answer—

31. Should foreigners be permitted to kill deer in Ontario ?

Answer—

32. If so, should they be required to pay for a permit? What price?

Answer—

33. Should exportation of venison be prohibited?

Answer—

34. Should the exportation of venison be permitted on a special fee and permit for each carcase?

Answer—

35. If so, what fee should be charged on each permit?

36. Present close season is from 20th November to 15th October of following year. Should this be changed?

Answer—

37. If so, in what respects? Why?

Answer—

38. Is the close season commonly disregarded, and by what classes?

Answer—

39. Would there be any reasonable objection against allowing pioneer settlers to kill deer for their own families' food, at all seasons, if they were effectually prevented from killing deer except for family food?

Answer—

40. What are your reasons for foregoing answer?

Answer—

41. Do you favor the establishment of a special service of game protectors or wardens to enforce the game laws?

Answer—

42. If so, should the sub-wardens be residents of localities under their charge?

Answer—

43. What are your reasons for foregoing answer?

Answer—

MOOSE, CARIBOU, ELK.

44. In what parts of Ontario have you found any and which of these animals?

Moose in district of

Caribou in district of

Elk in district of

45 Should the present prohibition against killing these animals be extended beyond October, 1895?

Answer—

46. Is the prohibition generally respected where these animals are found?

Answer—

Return this form when filled up to A. D. Stewart, Secretary Ontario Game and Fish Commission, Court House, Hamilton, Ont.

ONTARIO FISH AND GAME COMMISSION.

QUESTIONS RELATING TO BIRDS.

Name and address of witness.

Mr.

Occupation

Address

Post office

County

1. Where are you accustomed to observe or shoot any of the following wild birds ?

NAME OF BIRD.	County of	When arrive in spring.	When leave in autumn.	Do they breed here.
GROUSE (<i>Pheasant</i>): Ruffed Grouse or Birch Partridge ... Canada Grouse or Spruce Partridge... Pennated Grouse or Prairie Chicken. Sharp Tailed Grouse				
QUAIL				
TURKEY				
WOODCOCK.....				
SNIPES: Common or Wilson's				
Pectoral Sandpiper or Jack Snipe...				
Redbreasted				
RAIL: Sora or Carolina.....				
King				
Virginia				
PLOVER: Golden				
Tell Tale or Greater Yellow Shanks.				
Lesser Yellow Shanks				
Curlew				
SWAN: Whistling.....				
GEESE: Brant.....				
Canada				
Snow				
DUCKS: Gadwall				
Redhead				
Black				
Pintail				
Mallard.....				
Shoveller or Spoonbill				
Canvasback				
Blue Winged Teal.....				
Green Winged Teal				
American Golden Eye.....				
American Widgeon				
Buffle Headed.....				
Wood Duck.....				
Scaup or Blue Bill.....				
Ruddy Duck				
Coween or Long Tailed				
Scoter				

NOTE 1.—Place a cross X before the name of any bird that breeds in the locality named.

NOTE 2.—Place a square [] after the name of any bird that does not breed in the locality named.

NOTE 3.—Place a line — under names of birds of passage, or birds that stay but a short time.

2. Fill in the following table so far as you can do so from your own knowledge.

WILD BIRDS.	Relating to birds breeding in Ontario.				Relating to migratory birds.		Remarks.
	Laying time.	No. of eggs.	End of hatching time.	Time when all young are strong on wing.	Arrive.	Depart.	
GROUSE (<i>Pheasant</i>): Ruffed Grouse or Birch Partridge. Canada Grouse, or Spruce Partridge. Pennated Grouse, or Prairie Chicken Sharp Tailed Grouse.....							
QUAIL							
TURKEY							
WOODCOCK							
SNIPE: Common or Wilson's Pectoral Sandpiper or Jack Snipe. Redbreasted							
RAIL: Sora or Carolina..... King Virginia							
PLOVER: Golden Tall Tale or Greater Yellow Shanks Lesser Yellow Shanks..... Curlew							
SWAN: Whistling.....							
GEESE: Brant..... Canada Snow							
DUCKS: Gadwall Redhead Black..... Pintail Mallard..... Shoveller or Spoonbill Canvasback..... Blue Winged Teal Green Winged Teal American Golden Eye..... American Widgeon Buffle Headed..... Wood Duck..... Scaup or Blue Bill Ruddy Duck Coween or Long tailed..... Scoter							

NOTE 1.—Place a cross **x** before the name of any bird which should not be marketed or sold.

NOTE 2.—Place a square **|□|** after the name of any bird which should not be exported.

NOTE 3.—Place a line **—** under the name of any bird which should not be imported except under a high duty.

NOTE 4.—Make remarks on back if there is not room enough in column.

3. If you are opposed to the marketing of any of the foregoing birds, state which and why.

Answer—

4. If opposed to the exportation of any, state which and why.

Answer—

5. If opposed to the unrestricted importation of any, state which and why.

Answer—

6. Should the marketing or sale of game birds be strictly limited to the shooting season?

Answer—

7. What are your reasons for the foregoing reply?

Answer—

8. Should a certain time after the close season begins be allowed to dealers for sale of their stock? If so, how many days?

Answer—

9. Should the killing of wild turkeys be prohibited? If so, for how many years?

Answer—

10. The present close seasons are:

Grouse,	}	January 1st to September 1st.
Pheasant,		
Prairie Fowl,		
Partridge,		
Quail,	}	December 15th to October 15th of the following year.
Wild Turkey,		

Woodcock, January 1st to August 15th, same year.

Snipe,	}	January 1st to September 1st, same year.
Rail,		
Plover,		

Swan,	}	May 1st to September 1st, same year.
Geese,		

Ducks,	}	January 1st to September 1st, same year.
and all other		
Water Fowl,		

Are these seasons all properly set? If not, what changes do you recommend?

Answer—

11. If you have recommended any changes in close seasons, what are your reasons ?

Answer—

12. Should spring shooting of ducks, geese and swan be forbidden ? If so, why ?

Answer—

13. Should individual sportsmen be restricted to the shooting of a certain number of ducks in any one day ? If so, to how many ?

Answer—

14. Should duck shooting from sail boats and steam yachts be forbidden ? If so, why ?

Answer—

15. With a view of preventing the shooting of some birds in part of their close season, the suggestion that all shooting except quail should begin in September 15th has been made. Do you approve of this ?

Answer—

16. If so, state your reasons.

17. Should foreigners be allowed to shoot game birds in Ontario ?

Answer—

18. If so, should a license fee be exacted from them, and to what sum ?

Answer—

Return this form when filled up to A. D. Stewart, Secretary Ontario Game and Fish Commission, Court House, Hamilton, Ont.

ONTARIO FISH AND GAME COMMISSION.

QUESTIONS RELATING TO FISH.

Name and Address of Witness.

Mr.

Occupation

Address

Post Office

County

1. In what waters have you taken or observed any of the following fishes?
State spawning times.

NAME OF FISH.	Name of Water.	County or District.	Spawning time.	
			Begins.	Ends.
Common Speckled Trout or ... }				
Brook Trout..... }				
River Trout.....				
Great Lake Trout				
Salmon Trout.....				
White Fish.....				
Basas, Small Mouthed Black....				
“ Large “ or Oswego				
“ Rock				
“ Silver.....				
Maskinonge				
Pickarel (doré).....				
Pike				
Sheepshead				
Suckers				
Mullet				
Channel Catfish				
Grayling.....				
Mud Pout				
Eels				
Gold Eye.....				
Herring				
Chub.....				
Shiners.....				
Perch				
Sun Fish				
Sturgeon				
Dog-fish				
Gar-pike				

NOTE 1.—Place a cross **x** before the names of valuable or useful food fishes in above list.

NOTE 2.—Place a square ☐ after the names of fish that are useful as food for valuable fish.

NOTE 3.—Place a line — under the names of fish that should be destroyed on every occasion.

2. Do you know of any other Ontario fish? If so, name them?

Answer—

3. Name waters that have been, to your knowledge, wholly or nearly depleted of speckled or brook trout.

WATERS.	COUNTY.

4. Name waters wholly or nearly depleted, to your knowledge, of black bass, maskinonge, pickerel, sturgeon.

WATERS.	COUNTY.

5. Name waters wholly or nearly depleted, to your knowledge, of salmon trout, lake trout and white fish.

WATERS.	COUNTY.

6. Draw a line under the written names of such of the above waters as are still clean, free from sawdust, or in a condition to be profitably re-stocked with fish fry or eggs.

7. What were the principal causes of destruction of fish in the depleted waters?

Answer.

8. What illegal methods of killing fish are commonly practiced to your knowledge?

Answer.

9. The close seasons now set for fish are :

Speckled trout, 15th September to 1st May.

Salmon trout, }
White fish. } 1st November to 30th November.

Bass, }
Maskinonge. } 15th April to 15th June.

Brook or river trout, 15th April to 15th May.

Pickerel, 15th April to 15th May.

10. If you think any of the above close seasons improperly set, state which and give your reasons.

Answer.

11. Should pioneer settlers be allowed to take fish by legal methods at all seasons for their family food?

Answer.

12. In what waters of any of your acquaintance should all netting be forbidden.

Return this form when filled up to A. D. Stewart, Secretary Ontario Game and Fish Commission, Court House, Hamilton, Ont.

ONTARIO FISH AND GAME COMMISSION.

GENERAL QUESTIONS.

Name and Address of Witness.

Mr.

Occupation

Address

Post Office

County

1. Are close seasons for game and fish generally respected in localities that you know of?

Answer—

2. If not, what classes offend?

Answer—

3. Do many visitors shoot and fish in your neighbourhood?

Answer—

4. Do sporting and angling visitors put much money into circulation in your neighborhood?

Answer—

5. If the streams now depleted were re-stocked, and the game preserved would your neighborhood be considerably more attractive to visitors?

Answer—

6. Do you approve the suggestion that a provincial force of game and fish wardens, or protectors, should be established?

Answer—

7. If so, should the sub-protectors or sub-wardens be permanent residents of the localities under their supervision, and why?

Answer—

8. Can you suggest any method for raising a revenue from game and fish that would be sufficient to support non-resident sub-wardens ?

Answer—

9. Do you approve the suggestion that every owner of sporting fire-arms should be required to register his weapon, receive a license to use it, and pay a nominal fee therefor ?

Answer—

10. Do you approve the suggestion that shooters and anglers, when sporting in counties where they do not reside, should be required to take out a local permit at a small fee, to go to the expense of supporting the local game and fish wardens.

Answer—

11. If you approve of hunting deer with hounds, should every owner of a hound used in running deer be required to take a license for the dog ?

Answer—

12. Should the exportation of game and speckled or brook trout from Ontario be entirely forbidden ?

Answer—

13. If not, should outside sportsmen be required to pay something for permits to take their game and fish beyond the Province ?

Answer—

14. Should dealers in game be required to take out licenses, forfeitable in case they violate the game or fish protection laws ?

Answer—

15. Are there any extensive marshes or waste lands in your neighborhood ?

Answer—

16. If so, name them and state whether the title is still in the Crown.

Name of Marsh or Waste.	Township.	County.	Owner or Owners.

17. Do you approve the suggestion that residents near marshes or wastes should be encouraged to form associations to protect game and fish therein; the privileges of the association to be open to all county people paying a small fee, and to visitors paying a larger fee, both fees to be fixed by consent of the county council?

Answer—

18. Would the people of your neighborhood or county be likely to approve generally of such public and open game protection associations as are previously described?

Answer—

19. Should the formation of close or exclusive game and fish protection associations, covering marshes by freehold or lease, be encouraged or discouraged?

Answer—

20. Do any of the farmers of your neighborhood feed quails during the winter or take any other means to keep up game on their lands?

Answer—

Return this form when filled up to A. D. Stewart, Secretary Ontario Game and Fish Commission, Court House, Hamilton, Ont.

ONTARIO FISH AND GAME COMMISSION.

QUESTIONS RELATING TO ANIMALS OTHER THAN DEER, MOOSE, CARIBOU, ETC.

Name and Address of Witness.

Mr.

Occupation

Address

Post Office

County

Hares and Rabbits.

PRESENT CLOSE SEASON, 1ST MARCH TO 1ST SEPTEMBER.

1. Is this close season properly set?

Answer—

2. If not, what change should be made?

Answer—

3. What are your reasons for foregoing answer?

Answer—

4. Should snaring or trapping be allowed?

Answer—

5. If not, why not?

Answer—

6. Should black and grey squirrels be protected?

Answer—

7. If so, during what season?

Answer—

Fur-bearing Animals —Beaver, Mink, Muskrat, Sable, Marten,
Otter, Fisher.

8. Should the shooting of these animals in November, December or any other season be allowed?

Answer—

9. What are your reasons for foregoing reply ?

Answer—

10. Should the trapping season, at present from 1st November to 1st May be shortened ?

Answer—

11. If so, how ? and why ?

Answer—

Destructive Animals.—Wolves.

12. Every county treasurer is now obliged to pay \$6 bounty for every wolf killed in his county, or within one mile of a settlement in his county. Do you approve of this ?

Answer—

13. Should the bounty be increased, reduced or abolished ?

Answer—

14. Should some arrangements for bounties on wolf killing in unorganized districts be made ?

Answer—

15. What further suggestions have you to make in the matter of wolf bounties ?

Answer—

Foxes and other Vermin.

16. Should a bounty be given for the destruction of foxes ?

Answer—

17. If so, why, and to what amount ?

Answer—

18. Should bounties be given for the destruction of owls, mink, weasels and hawks ?

Answer—

19. If so, why ? and to what amount ?

Answer—

20. What other vermin destructive to game or fish should be, if possible, destroyed ?

Answer—

Return this form when filled up to A. D. Stewart, Secretary Ontario Game and Fish Commission, Court House, Hamilton, Ont.

ONTARIO FISH AND GAME COMMISSION.

SPECIAL QUESTIONS TO HOTEL-KEEPERS AND STOREKEEPERS IN SPORTING LOCALITIES.

Name and Address of Witness.

Mr. _____
 Occupation _____
 Address _____
 Post Office _____ County _____

1. Do you do much business with campers, sportsmen and anglers ?

Answer—

2. Would this business be improved if fish and game were protected and multiplied in your locality ?

Answer—

3. Do summer parties often destroy deer ?

Answer—

4. Are the close seasons for game and fish generally respected in your neighborhood ?

Answer—

5. If not, who are the principal offenders ?

Answer—

Return this form when filled up to A. D. Stewart, Secretary Ontario Game and Fish Commission, Court House, Hamilton, Ont.

ONTARIO FISH AND GAME COMMISSION.

SPECIAL QUESTIONS TO MANAGERS OR OTHER SUPERVISORS OF RAILWAY AND STEAMBOAT LINES.

Name and Address of Witness.

Mr.

Occupation

Address

Post Office

County

1. Does your line do much traffic in sporting, camping and angling passengers?

Answer—

2. Upon what routes? if by steamboats, name them.

Answer—

3. Give, if possible, an approximate estimate of the value of the passenger, camping, and other traffic, arising from shooting and fishing sport.

Answer—

4. Would the preservation and multiplication of game and fish probably improve the traffic above mentioned?

Answer—

5. Some American railway companies give free transportation to fish fry from State hatcheries, and otherwise assist game wardens or protectors. Would your line probably act with similar liberality?

Answer—

6. Would you object to allowing your conductors or pursers on sporting routes to act on behalf of the Government in issuing permits or licenses, to shoot, or fish, if such licenses were required by law?

Answer—

Return this form when filled up to A. D. Stewart, Secretary Ontario Game and Fish Commission, Court House, Hamilton, Ont.

ONTARIO FISH AND GAME COMMISSION.

SPECIAL QUESTIONS TO CONDUCTORS, PURSERS, ETC.

Name and Address of Witness.

Mr.

Occupation

Address

Post Office

County

1. Do you travel on a sporting or angling division or line?

Answer—

2. What division, line, or boat?

Answer—

3. Do sportsmen, campers, and anglers form a considerable portion of the passenger traffic in summer and fall?

Answer—

4. Do deer hunters usually bring hounds with them?

Answer—

5. Would you, if your manager consented, be willing to act on behalf of the Government in issuing licenses or permits for shooting and fishing?

Answer—

6. Could you probably give efficient service in these respects?

Answer—

7. What are your reasons for foregoing answer?

Answer—

Return this form when filled up to A. D. Stewart, Secretary Ontario Fish and Game Commission, Court House, Hamilton, Ont.

ONTARIO FISH AND GAME COMMISSION.

SPECIAL QUESTIONS FOR DEALERS IN GAME, FISH, ETC.

Name and Address of Witness.

Mr.

Occupation

Address

Post Office

County

1. Is game commonly offered to you before the season opens?

Answer—

2. Is all vension in prime condition when the shooting season begins?

Answer—

3. Are November bucks in prime condition for food?

Answer—

4. Are most of the deer that come to market, shot through the neck and probably while swimming?

Answer—

5. What price is usually paid for raw fawn, doe, and buck skins in good condition?

Answer—

6. What price for large buck heads?

Answer—

7. Is there an active market for buck horn?

Answer—

Return this form when filled up to A. D. Stewart, Secretary Ontario Game and Fish Commission, Court House, Hamilton, Ont.

ONTARIO FISH AND GAME COMMISSION.

SPECIAL QUESTIONS FOR DEALERS IN GUNS, TACKLE, ETC

Name and Address of Witness.

Mr.

Occupation

Address

Post Office

County

1. If owners of guns, rifles, and pistols, other than those used for military purposes, were required to register their weapons and take out shooting licenses at a nominal fee, what would be the effect on your trade?

Answer—

2. If gun and tackle dealers were supplied with such licenses and authorized to issue them on making sales, would the trade be affected?

Answer—

3. Would the strict enforcement of the game laws benefit your trade by increasing the game and the amount of shooting?

Answer—

4. If gun licenses were necessary to game preservation, and if your trade would be improved by game preservation, would you be willing to assist in carrying out the game license system?

Answer—

Return this form when filled up to A. D. Stewart, Secretary Ontario Game and Fish Commission. Court House, Hamilton, Ont.

ONTARIO FISH AND GAME COMMISSION.

SPECIAL QUESTIONS TO GUIDES.

Name and address of witness.

Mr.

Occupation

Address

Post Office

County

1. Where do you act as guide ?

Answer—

2. What pay do you usually get ?

Answer—

3. How many days of the year are you commonly employed as guide ?

Answer—

4. How many other guides are there in your locality ?

Answer—

5. Do you furnish canoes and dogs ?

Answer—

6. If so, what do you get for use of canoes per day ?

Answer—

7. What for dogs per day ?

Answer—

Return this form when filled up to A. D. Stewart, Secretary Ontario Game and Fish Commission, Court House, Hamilton, Ont.

ONTARIO FISH AND GAME COMMISSION.

SPECIAL QUESTIONS TO BOAT AND CANOE BUILDERS.

Name and address of witness.

Mr.

Occupation

Address

Post Office

County

1. Do you sell or rent many boats or canoes to campers, sportsmen, and anglers?

Answer—

2. Would the preservation or multiplication of game-animals, birds, and fish, probably be beneficial to your trade in making the Province more attractive to sportsmen and campers generally?

Answer—

As soon as these questions were ready for distribution, notice was given through the public press to this effect, and sportsmen and others interested in the question of the protection, preservation and propagation of the game and fish in the Province, and who were willing to aid your Commissioners by giving them the benefit of their advice and experience, were requested to send for a set of the tabulated questions.

The result of this notice was astonishing, for hardly had the advertisements appeared, before letters came pouring in from all parts of the Province and from all classes of the community, asking for copies of the questions, and promising assistance and co-operation in every possible shape and form.

In addition to the answers received to the above-mentioned questions, hundreds of interesting communications were received, not only from residents of the Province, but from sportsmen outside of Ontario, and these have in most cases been of great assistance to your Commissioners, and are hereby gratefully acknowledged.

It is gratifying to be able to state that, in travelling through the Province, your Commissioners found the work of the Commission to be highly popular, and it may safely be said, judging from opinions universally expressed, that the Commission was not issued a day too soon.

The work of collecting the information has been pleasant if laborious, and much valuable information has been acquired.

In reference to the answers given by witnesses, it is necessary to state that whilst a complete record has been kept, some of them are comparatively valueless, because they have been given from purely selfish motives. The true sportsmen, and those desirous of seeing the Province re-stocked with game and fish, have invariably expressed a willingness to sink all smaller considerations in order that the most good might be done. But others with narrower minds have given such answers as are applicable only to their own cases; some of them going so far as to say that no steps of any kind should be taken to preserve the game and fish in Ontario, because these were already scarce and might as well be used up by the present generation.

The following table will show the dates and places at which meetings were held by your Commissioners, and the names of the witnesses who appeared to give evidence.

No. 1 DISTRICT.

BELLEVILLE, 10th and 11th April, 1891.

COMMISSIONERS.— MESSRS. HERVEY, SMITH, TAYLOR AND STEWART.

WITNESSES.

D. R. Leavens, Farmer.
 Jas. T. Bell, Physician.
 R. S. Bell, Journalist.
 E. B. Fralick, County Judge.
 E. N. Leavens, Accountant.

Fred. Root, Carriage Trimmer.
 J. N. Pringle, Manufacturer.
 J. W. Loudon, Printer.
 Geo. Twining, Painter.

BROCKVILLE, 13th and 14th April, 1891

WITNESSES.

Joseph Deacon, Barrister.
 David S. Booth, Contractor.
 A. F. Stagg, Butcher.
 A. Armstrong, Hotel-keeper.

Geo. Bucher, Merchant.
 Neil McLean, Banker.
 J. R. Griffin, Banker.

OTTAWA, 15th, 16th and 17th April, 1891.

WITNESSES.

F. G. Vanderlip, Hotel-keeper.
 J. B. Spence " "
 W. P. Lett, City Clerk.
 W. R. McEwan, Clerk.
 H. D. J. Lane, Clerk.
 Louis J. Consolles, Patent Agent.
 W. P. Batterton, Book-keeper.
 P. A. McDougall, Physician.

A. H. Johnston, Farmer.
 F. H. F. Mercer, Clerk.
 T. G. Carpenter, Agent.
 J. R. Quain, Electrician.
 W. J. Topley, Photographer.
 W. W. Boucher, Vet. Surgeon.
 Geo. C. Wood, Clerk.

RENFREW, 18th April, 1891.

WITNESSES.

Xavier Plaunt, Farmer.
 Donald McLaren, "
 Xavier Plaunt, jr., Hotel Clerk.
 Frank Byers, Farmer.
 Robt. Cameron, "
 Jno. McRae, Gentleman.

Jas. Craig, Barrister.
 Jno. Park, Gentleman.
 S. O. Gorman, Constable.
 Joseph Beggs, Farmer.
 J. D. Deacon, Physician.
 David Barr, Gentleman.

No. 2 DISTRICT.

PETERBORO', 1st and 2nd April, 1891.

COMMISSIONERS.—MESSRS. SMITH, MITCHELL, THOMSON AND STEWART.

WITNESSES.

R. A. Morrow, Gentleman.
 H. Winch, Butcher.
 Wm. Hall, Merchant.
 F. J. Moore, Carpenter.
 G. S. Sproule, Photographer.
 J. D. Collins, Gentleman.
 H. Calcutt, Brewer.
 T. W. Gibbs, Agent.
 R. C. Strickland, Gentleman.
 Jno. Bennett, Fish Inspector.
 Thos. Eastwood, Hotel-keeper.

R. E. Wood, Barrister.
 R. Watson, Inspector.
 A. Paterson, Drover.
 Samuel Ray, Tobacconist.
 L. G. Steele, Farmer.
 Jno. Richardson, Mason.
 Wm. Brownscombe, Lock master.
 R. Tivey, Bridge Inspector.
 G. Cochrane, Inspector.
 Thos. P. Atrill, Gentleman.

LINDSAY, 3rd and 4th April, 1891.

WITNESSES.

Thomas Walters, Contractor.
 Geo. W. Rose, Steam-boat Captain.
 Alex. Ross, Contractor.
 Johnson Ellis, Farmer.
 Wm. Thorndyke, "
 E. A. Knowlson, Clerk.
 J. Finnegan, Farmer.
 A. J. Davis, "
 Henry Cohen, Pump Maker.
 Freemont Crandell, Engineer.
 Joseph Littell, Farmer.

Wm. Mulcahy, Farmer.
 B. Bryan, Contractor.
 Thos. Fee, Farmer.
 Chas. Spillsbury, Gentleman.
 R. H. Hopkins, Book-keeper.
 J. W. Wallace, Manufacturer.
 J. Woods, Physician.
 J. C. Hood, Physician.
 W. A. Goodwin, Merchant.
 G. Thornhill, Teamster.
 A. W. J. DeGrassi, Physician.

FENELON FALLS, 6th April, 1891.

WITNESSES.

Jas. Dixon, P. L. S.
 C. E. Bonnell, Physician.
 W. J. Reid, Merchant.
 W. T. C. Boyd, "
 A. E. Bottum, "

Jno. Sedgewick, Farmer.
 Geo. Whissle, Butcher.
 E. R. Edwards, Livery Stable Keeper
 A. Stevens, Miller.

HALIBURTON, 8th April, 1891

WITNESSES.

W. J. Austin, Merchant.
C. S. Austin, Gentleman.
Geo. Bemmister, Civil Engineer.
Jas. Warley, Cabinet Maker.
Jno. Reid, Carpenter.
Jno. Lucas, Hotel-keeper.
Eldridge Leith, Merchant.

P. O'Connor, Trapper.
C. R. Stewart, Gentleman.
Jos Kellet, Hotel-keeper.
Jos. Paul, Butcher.
Stephen Dawson, Farmer.
Fred. Freeman, Merchant.
L. M. Neily, Shoemaker.

No. 3 DISTRICT.

TORONTO, 18th and 19th Dec., 1890.

COMMISSIONERS.—MESSRS. MACCALLUM, MITCHELL, PULFORD, LUCAS, THOMSON,
SMITH, TAYLOR, WILMOTT, STEWART.

WITNESSES.

Edward Harris
T. D. Wilson.
E. J. Cousins.
A. Peterson.
J. A. Sweeney.
Frank Wing
Joseph E. Rogers
Robert Gowans.
A. J. Taylor.
J. W. Mencke.
R. H. Holmes.
S. R. Clarke.
Major Lee.
Frank Binsett.
Wm. Brodie.
E. H. Bastedo.
S. G. Beattie.

Occupations
not
ascertained.

F. H. Gooch.
J. Pearsall.
F. S. Bayles.
R. M. Fisher.
J. G. Nunn.
R. Tinning, jr.
D. S. Bottsford.
S. W. Semple.
Dr. Tyrell.
E. P. Borron.
J. S. Wallace.
F. G. Verity.
D. F. McDonald.
Dr. J. Teskey.
J. McLachlan.
James Douglas.
A. Tymon.

Occupations
not
ascertained.

No. 3 DISTRICT.

BRACEBRIDGE, 2nd and 3rd June, 1891.

COMMISSIONERS.—MESSRS. WILMOTT AND STEWART.

WITNESSES.

Jno. A. Dole, Saw-mill Proprietor.	E. F. Stephenson, Journalist.
Robt. Robinson, Jail-keeper.	Frank Kent, Vet. Surgeon.
Chas. E. Mawdsley, Law Student.	Alfred Hunt, Banker.
Hector McGinnis, Foreman Lumber Co.	Jas. Boyle, Town Clerk.
Jas. Hall, Farmer.	Jas. Ripkie, Law Student.
Jno. Wardell, Butcher.	J. C. Davidson, Sawmill Foreman.
Jas. Hillman, Tinsmith.	Singleton Brown, Shingle Mill Prop.

PARRY SOUND, 6th June, 1891.

WITNESSES.

S. B. Purvis, Lumberman.	Frank Lafex, Butcher.
Thos. McGowan, Farmer.	Edward Taylor, Shoemaker.
Jacob Joliffe, Contractor.	Wm. Ireland, Newspaper Prop.
Wm. Fry, Farmer.	J. M. Anstey, Postmaster.
Wm. Cargill, Guide.	J. R. Legatt, Watchmaker.
Alex. Cargill, “	W. L. Haight, Barrister.

BLACKSTONE LAKE, 8th June, 1891.

WITNESSES.

Jno. Vankoughnet, Farmer.	Henry Vankoughnet, Farmer.
---------------------------	----------------------------

BURK'S FALLS, 10th June, 1891.

WITNESSES.

Ridley Appleby, Farmer.	Jno. Thom, Farmer,
-------------------------	--------------------

No. 4 DISTRICT.

WINDSOR, 5th May, 1891.

COMMISSIONERS.—MESSRS. MACCALLUM, LUCAS, PULFORD AND STEWART.

WITNESSES

Joseph Winter, Butcher.	C. H. Paré, Farmer.
Geo. A. Goodwin, Contractor.	R. Digman, Carpenter.
Dan. G. Revell, Conductor.	Albert Drouillard, Custom Officer.
Wm. Donaldson, Painter.	

LONDON, 7th May, 1891.

WITNESSES.

Jno. Pring, Lather.
 F. L. Trebilcock, Jeweller.
 N. H. Beemer, Physician.
 C. R. Cameron, Barrister.
 M. J. Kemp, Manager.
 H. A. Nicholson, Banker.
 H. A. Stevenson, Med. Student.
 Jno. Burns, Bailiff.
 E. A. Cleghorn, Wholesale Grocer.

L. McDonald, Dentist.
 W. C. L. Gill, City Registrar.
 W. T. Williams, Chief of Police.
 E. W. Sayers, Accountant.
 C. W. Davis, Hotel-keeper.
 Wm. Avey, Hotel-keeper.
 T. J. Hammond, Insurance Agent.
 J. Schreiber, G. T. R. Agent.

CHATHAM, 6th May, 1891.

WITNESSES.

W. B. Wells, Div. Court Clerk.
 Jno. Mercer, Sheriff.
 Gordon Boles, Retired Captain.
 J. L. Nichols, Dentist.
 Jas. Thomas, Farmer.
 Wm. Crow, Farmer.
 S. Holmes, Miller.
 Abbot Wilcox, Farmer.
 G. A. Layer, Law Student.
 David Wilson, Manager.
 Jas. McGarvin, Farmer.
 P. McGarvin, "
 Alex. Ducedre, "
 Geo. Kime, "
 A. Alexander, "
 J. B. Gillard, Warden.

Wm. L. Cameron, Farmer.
 Chas. Eastlake, Merchant.
 H. J. O'Hone, "
 M. Massey, Farmer.
 Jas. Kime, Vet. Surgeon.
 C. Wheeler, Cattle Dealer.
 D. Smith, Farmer.
 Albert Williams, Farmer.
 Abraham Alexander, jr., Farmer.
 Jas. Rankin, Farmer.
 J. H. Nelson, Bailiff.
 Jas. Hamilton, Fisherman.
 Jno. Houston, Farmer.
 Henry Dagman, Merchant.
 H. A. Crow, Farmer.
 W. A. Campbell, Clerk.

HAMILTON, 8th and 9th May, 1891.

WITNESSES.

R. Æ. Kennedy, Journalist.
 Edwin Dalton, Farmer.
 Geo. McCurley, "
 Dan. McLean,
 Wm. Payne,
 David Maddocks,
 Andrew Ross, Agent.
 Caleb Lousley, Farmer.
 Albert Clements, "
 J. J. Steele, Maltster.
 Jno. I. McKenzie, Inspector.
 Andrew Murdoch, Agent.
 Dr. McGregor.

A. Bowman.
 Louis Snider.
 Samuel McNair, Clerk.
 Wm. Morton, Game and Fish dealer.
 Wm. Drayton, "
 A. E. Malloch, Physician.
 Jno. Smith, Agent.
 Jas. Crooks, Hotel-keeper,
 Jno. S. Hendrie, Contractor.
 Albert Smith, Salesman.
 Thos. Hutchinson, Engineer.
 E. Tinsley, Engineer.

SIMCOE, 14th May, 1891.

WITNESSES.

W. E. Tisdale, Barrister.
 H. H. Groff, Private Banker.
 Jno. Matthews, Collector of Customs.
 J. W. Ryerson, Barrister.
 J. Lorne Campbell, Gentleman.
 L. M. Sovereign, Merchant.
 Jas. Duncan, Farmer.

Walter H. Anderson, Farmer.
 Ed. Parker, Farmer.
 W. T. Nickerson, Auctioneer.
 J. B. Piche, Farmer.
 J. H. Helmer, "
 Jas. Overholt, Fisherman.

DUNNVILLE, 15th May, 1891.

WITNESSES.

Fred Lowe, Gentleman.
 Martin Green, Fisherman.
 John Green, "
 Wm. McIndoe, Gentleman.
 Freeman Green, Fisherman.
 J. C. Eccles, Barrister.
 Jas. Smith, Guide.
 Jas. Clifford, Fisherman.

Wm. Lambier, Fisherman.
 Jas. Vanderburg, "
 Lewis Fox, "
 Isaac Wismer, Blacksmith.
 W. G. Wismer, "
 S. W. Hornbirook, Farmer.
 Chas. Ross, Fisherman.
 Henry Fox, "

It happened in some cases, that witnesses who attended the meetings of the Commissioners, also sent written answers to the questions issued, and in cases of this kind the *viva voce* evidence only has been recorded, so that witnesses' names might not appear twice.

The questions issued by the Commissioners were answered as follows:—

Questions on Deer by	650	Witnesses.
Questions on Birds by	485	"
Questions on Fish by	497	"
General questions by	604	"
Questions on Animals other than Deer, Moose, Caribou, etc., by	578	"
Special questions to Hotel-keepers and Store-keepers in sporting localities	10	"
Special questions to Managers or Supervisors of railway and steamboat lines	5	"
Special questions to Conductors, Pursers, etc.	15	"
Special questions to Dealers in game, fish, etc.	11	"
Special questions to Dealers in guns, tackle, etc..	9	"
Special questions to Guides	7	"
Special questions to Boat and Canoe-builders	2	"

QUESTIONS RELATING TO DEER.

The questions prepared on this subject by your Commissioners were answered by 650 persons as follows:—

Name.	Occupation.	Address.	County.
Thos. Penfold	Gaoler	Port Arthur.....	Algoma.
John Piche	Wood-ranger	Sudbury	"
Thos. Frood	Farmer	Little Current	"
John Forde	Fur trader	Schrieber	"
Geo. Mair	Banker	Lucknow	Bruce.
R. Russell	Merchant	Hepworth	"
Augustus Smith	Brick Manufacturer	Port Elgin	"
Wm. Campbell	Carriage builder	Tara	"
J. E. Murphy	Lumberman	Hepworth Station	"
Jos. Robinson	Merchant	Wiaraton	"
S. Irwin	"	"	"
C. Jones	"	"	"
R. M. Fisher	Physician	"	"
E. Rumley	Engineer	Lion's Head	"
A. F. Bowman	Farmer	Southampton	"
N. B. Zinkan	Merchant	"	"
John H. Burrows	Carpenter	"	"
Cecil Swale	Farmer	Wiaraton	"
John H. Garnier	Physician	Lucknow	"
Hirman M. Smith	Miller	Southampton	"
W. J. Topley	Photographer	Ottawa	Carleton
W. W. Boucher	Vet. Surgeon	South March	"
Geo. Carleton Wood	P. O. Dept	"	"
J. R. Quain	Electrician	Ottawa	"
P. A. McDougall	Physician	"	"
A. H. Johnson	Farmer	Castleford	"
F. H. F. Mercer	Gentleman	Ottawa	"
T. G. Carpenter	Agent	Arnprior	"
P. G. Vanderlip	Hotel-keeper	Ottawa	"
J. B. Spence	"	"	"
W. P. Lett	City Clerk	"	"
Michael Roddy	Farmer	Castleford	"
John Bruce	"	Ottawa	"
A. Pratt	Ass't Commissioner	"	"
Redmond Quain	Civil Servant	"	"
John T. G. White	Lumber Merchant	"	"
John Stewart	P. L. Surveyor	"	"
A. P. Sherwood	Police Commissioner	"	"
Thos. Stewart	Machinist	"	"
Harry Street	Farmer	March	"
Henry T. Smith	Clerk	Ottawa	"
John Sutherland	Contractor	"	"
G. S. MacFarlane	Lumber Agent	"	"
Alex. Stewart	Farmer	Hintonburg	"
Henry R. Smith	Lieut.-Colonel	Ottawa	"
Geo. Torney	Merchant	"	"
Wm. Ahearn	Blacksmith	"	"
J. H. Ellis	Carpenter	"	"
Wm. Hutchinson	Manufacturer	"	"
Wm. O'Leary	Farmer	Loretto	Cardwell.
Wm. McIntosh	Insurance Agent	Newcastle	Durham.
H. H. Burnham	Mayor	Port Hope	"
Geo. M. Furby	Manager	"	"
Job Dickinson	Farmer	Zion	"
R. Dinner	"	"	"
Ralph Casselman	"	Casselman	Dundas.
Joseph Markel	Cooper	Chesterville	"
W. Armstrong	Hotel-keeper	Morrisburg	"
Joseph Markebly	Gentleman	Chesterville	"
Alex. McKay	Farmer	Morewood	"
J. C. Fox	Pres. Orangeville Gun Club	Orangeville	Dufferin.
A. White	Miller	Orwell	Elgin.
Alfred Zavity	Carpenter	Sparta	"
Anthony Pettypiece	Farmer	McGregor	Essex.
John Walters	Carpenter	Harrow	"
Geo. E. Pettypiece	Farmer	McGregor	"

QUESTIONS RELATING TO DEER.—(Continued.)

Name.	Occupation.	Address.	County.
Wm. Brick.....	Farmer.....	Vereker.....	Essex.
Angus E. Wright.....	".....	Harrow.....	"
Thos. L. Wright.....	".....	Oxley.....	"
Geo. A. Goodwin.....	Builder.....	Windsor.....	"
Albert Snow.....	Farmer.....	".....	"
Jerome Thomson.....	Lumberman.....	Sharbot Lake.....	Frontenac.
J. H. Borekwood.....	Rod and Flymaker.....	Kingston.....	"
John G. Gordon.....	Farmer.....	Parham.....	"
Wm. A. Wagar.....	".....	".....	"
M. Cronk.....	".....	".....	"
Robt. Clow.....	".....	".....	"
E. S. Rodgers.....	Vet. Surgeon.....	Meaford.....	Grey.
John Legat.....	Agent.....	Owen Sound.....	"
Jas. Gladstone.....	Bartender.....	".....	"
Geo. Euclidean.....	Barber.....	".....	"
D. Hunter.....	".....	Miller's Corners.....	Grenville.
H. Hughes.....	Merchant.....	Hickstone.....	"
Kemptville Fish & Game Club.....	".....	Kemptville.....	"
Elias Harris.....	Farmer.....	".....	"
John Bennett.....	".....	Athol.....	Glengarry.
Fred B. Lacy.....	".....	Beechmont.....	Hastings.
Jas. Nosworthy.....	Gentleman.....	Belleville.....	"
Wm. Conley.....	Farmer.....	Madoc.....	"
R. S. Tivy.....	Merchant.....	Coe Hill.....	"
P. P. Clark.....	".....	St. Ola.....	"
Samuel Haryett.....	".....	Maynooth.....	"
Robt. McLean.....	Farmer.....	Boulter.....	"
R. C. Fair.....	Stove Merchant.....	Bancroft.....	"
James W. Ham.....	Farmer.....	St. Ola.....	"
Joseph Stonebug.....	Policeman.....	Belleville.....	"
Henry Foster.....	Hunter.....	Faraday.....	"
A. G. Allison.....	Despatcher G. T. Ry.....	Belleville.....	"
Ellis Stimer.....	Hunter.....	Bancroft.....	"
Edward Johnson.....	Bush Ranger.....	".....	"
Geo. McAllister.....	".....	Boulter.....	"
C. J. Baragar.....	Farmer.....	Sine.....	"
Stephen Badgley.....	".....	Stirling.....	"
Francis Bird.....	Carpenter.....	".....	"
S. Dennison.....	Farmer.....	Purdy.....	"
John Bell.....	".....	Frankford.....	"
Thos. J. Moore.....	".....	St. Ola.....	"
Geo. Pattison.....	".....	Coe Hill Mines.....	"
John Lynch.....	".....	Maynooth.....	"
Gilbert Holmes.....	".....	St. Ola.....	"
Thos. B. Watt.....	".....	Coe Hill Mines.....	"
Anson Cummings.....	".....	Anson.....	"
A. W. Tivy.....	".....	Coe Hill Mines.....	"
Wm. H. Sweet.....	".....	Bancroft.....	"
Bidwell Sim.....	".....	Harold.....	"
Willet Turner.....	".....	Farady.....	"
Thos. Nugent.....	".....	Nugent.....	"
John Campbell.....	".....	Havergal.....	"
Robt. Hewton.....	".....	Faraday.....	"
Wm. S. Clarke.....	".....	Holloway.....	"
J. C. George.....	Postmaster.....	Bancroft.....	"
John McAllister.....	Farmer.....	Bird's Creek.....	"
R. S. Bell.....	Journalist.....	Belleville.....	"
Jas. T. Bell.....	Physician.....	".....	"
D. R. Leavens.....	Farmer.....	".....	"
Frederick Root.....	Carriage Trimmer.....	".....	"
E. B. Fralick.....	County Judge.....	".....	"
G. N. Leavens.....	Accountant.....	".....	"
Jno N. Pringle.....	Manufacturer.....	".....	"
J. W. Loudon.....	Printer.....	".....	"
Geo. Twining.....	Painter.....	".....	"
Henry Bird.....	Farmer.....	The Ridge.....	"
Wm. Elliott.....	".....	Coe Hill Mines.....	"
Fred Mullett.....	Hotel-keeper.....	Bancroft.....	"
John Alexander.....	Farmer.....	Tansley.....	Halton.

QUESTIONS RELATING TO DEER —(Continued.)

Name.	Occupation.	Address.	County.
Albert Clements.	Farmer	Trafalgar	Halton.
John Prie	Blacksmith	Drumquin	"
Oscar E. Hood	Farmer	"	"
Wm. Pantou	Editor	Milton	"
J. H. Burns	Gentleman	Burlington	"
Thos. Ireland	Farmer	Nelson	"
T. Glover	"	Freeman	"
John Boyes	"	Nelson	"
Geo. McCurlie	"	"	"
Daniel McLaren	"	"	"
John J. Filman	"	"	"
Edwin Dalton	"	Burlington	"
Caleb Lousley	"	Tansley	"
T. J. Wheeler	Secretary	Trafalgar	"
Wm. Dalton	Farmer	Georgetown	"
John E. Ford	"	Tansley	"
Geo. W. Stevens	"	Georgetown	"
C. Sawyer	Guide	Peterson's Corners	Haliburton.
Peter Barr	Merchant	Dorset	"
W. J. Austin	"	Irondale	"
C. S. Austin	"	Haliburton	"
Geo. Bemister	Gentleman	"	"
Jas. Worley	Civil Engineer	"	"
Jno. Reid	Cabinet Maker	"	"
Jno. Lucas	Carpenter	"	"
E. Leith	Hotel-keeper	"	"
P. O'Connor	Merchant	"	"
C. R. Stewart	Trapper	"	"
Jas. Kellett	Gentleman	"	"
Jos. Paul	Hotel-keeper	"	"
Stephen Dawson	Butcher	"	"
Fred Freeman	Farmer	"	"
L. M. Neily	Merchant	"	"
Jas. Turnbull	Shoemaker	"	"
Richard Davis	Carpenter	Minden	"
Edward Noice	Shoemaker	"	"
Arch. McColl.	Merchant	"	"
Geo. Gregory	Farmer	"	"
E. W. Lockman	"	Gooderham	"
Geo. Tutt	Guide	Wicksteed	"
Thos. Scott	"	Dorset	"
P. Hawthorn	Farmer	"	"
Chas. Mitchell	"	Kinnaway	"
W. H. Campbell	"	Seaforth	Huron.
Peter McEwen	Contractor	Molesworth	"
Peter J. Bishop	Farmer	Seaforth	"
John Lamont	Farmer	Leadbury	"
Fred Lowe	Stonemason	Ethel	"
Martin Green	Farmer	"	"
Jno. Green	"	Dunnville	Haldimand.
Wm. McIndoe	"	"	"
Freeman Green	"	"	"
J. C. Eccles	Barrister	"	"
Jas. Smith	"	"	"
Jas. Clifford	"	"	"
Wm. Lambier	"	"	"
Jas. Vanderbug	"	"	"
Lewis Fox	"	"	"
Jn. E. Scott	D'y Supt. Welland Canal	"	"
Isaac Wismer	"	"	"
W. G. Wismer	"	Cayuga South	"
J. B. Gillard	Banker	"	"
Wm. L. Camerou	Farmer	Wallaceburg	Kent.
Wm. Weldon	Farmer	Harwick	"
Samuel Burk	Hotel-keeper	Morpeth	"
Stephen Russell	Farmer	Blenheim	"
J. B. Reynolds	"	"	"
Chas. Eastlake	Merchant	Rond Eau	"
H. J. O'Lone	Merchant	Ridgetown	"
N. Massey	Hardware merchant	"	"
	Farmer	Chatham	"

QUESTIONS RELATING TO DEER.—(Continued.)

Name.	Occupation.	Address.	County.
Jas. Kine.....	Vet. Surgeon.....	Chatham.....	Kent.
O. Wheeler.....	Merchant.....	".....	"
D. R. Watson.....	Caretaker.....	Morpeth.....	"
Joseph Deacon.....	Police Magistrate.....	Brockville.....	Leeds.
David S. Booth.....	Contractor.....	".....	"
A. F. Stagg.....	Butcher.....	".....	"
Geo. Bucher.....	".....	".....	"
A. Armstrong.....	Hotel-keeper.....	Athens.....	"
Wm. Fyfe.....	Mechanic.....	Westport.....	"
John K. Thomson.....	".....	Rockport.....	"
Wm. Neilson.....	".....	".....	"
H. T. Fitzimmons.....	".....	".....	"
Reuben Gile.....	Farmer.....	Smith's Falls.....	"
P. W. Strong.....	Manufacturer.....	Brockville.....	"
Jas. Paton.....	Gentleman.....	Beamsville.....	Lincoln.
S. D. Woodruff.....	".....	St. Catharines.....	"
F. McEwen.....	Physician.....	Carleton Place.....	Lanark.
Jas. E. Armstrong.....	Dentist.....	Almonte.....	"
Alex. McLaren.....	Clerk.....	Carp.....	"
John Boal.....	Farmer.....	Cedar Hill.....	"
Duncan Campbell.....	Tailor.....	Almonte.....	"
Geo. Bradford.....	Contractor.....	".....	"
Chas. Gover.....	Carriagemaker.....	Carleton Place.....	"
Herman McFadden.....	Engineer.....	".....	"
D. H. Davis.....	Tobacconist.....	Almonte.....	"
G. H. Gilbert.....	Hairdresser.....	".....	"
Isaac Korny.....	Saw-miller.....	Waverly.....	"
D. G. Macdonell.....	Barrister.....	Almonte.....	"
I. L. Huffman.....	Druggist.....	Napanee.....	Lennox.
Uriah Sills.....	Farmer.....	".....	"
Francis Van DeBogart.....	Ranchman.....	".....	"
J. A. Dill.....	Merchant.....	Bracebridge.....	Muskoka.
Arthur Monteith.....	Hunter.....	Rosseau.....	"
J. Monteith.....	Hotel-keeper.....	".....	"
J. McLean.....	Farmer.....	Torrance.....	"
Henry Austin.....	Yeoman.....	Bardsville.....	"
Wm. Clarke.....	Carpenter.....	Port Sydney.....	"
E. Brooks.....	".....	Antioch.....	"
Geo. E. Langford.....	Farmer.....	Bracebridge.....	"
H. G. King.....	Butcher.....	Gravenhurst.....	"
Benj. S. Beley.....	".....	Rosseau.....	"
Alfred Jackson.....	Farmer.....	Bala.....	"
Chas. Wm. Riley.....	".....	Milford Bay.....	"
Wm. I. Terry.....	Settler.....	Vankoughnet.....	"
Richard S. Cole.....	Farmer.....	Dorset.....	"
Jno. A. Dale.....	Miller.....	Lake of Bays.....	"
Robt. Robinson.....	Jailer.....	Bracebridge.....	"
Chas. E. Mawdsley.....	Clerk.....	".....	"
Hector McGinnis.....	".....	".....	"
Jas. Hall.....	Farmer.....	Stephenson.....	"
Jno. Wasdell.....	Butcher.....	Bracebridge.....	"
Jas. Hillman.....	Tinsmith.....	".....	"
E. F. Stephenson.....	Journalist.....	".....	"
Frank Kent.....	Vet. Surgeon.....	".....	"
A. H. Campbell.....	Manager.....	Muskoka Mill.....	"
Francis Hammell.....	Farmer.....	Antioch.....	"
E. J. Brooks.....	Post master.....	".....	"
Wm. Gohm.....	".....	Bracebridge.....	"
Thos. Burgess.....	Saw-mill proprietor.....	Bala.....	"
Thos. E. J. Salmon.....	Farmer.....	Dwight.....	"
Harris Demara.....	".....	Baysville.....	"
W. G. Stewart.....	".....	Brackenrig.....	"
Erastus Hanes.....	".....	Utterson.....	"
Wm. Austin.....	".....	".....	"
Hugh Brown.....	".....	".....	"
Wm. Clark.....	".....	".....	"
Wm. J. Miller.....	".....	Vankoughnet.....	"
Geo. Archer.....	".....	Mecunoma.....	"
John Telfer.....	".....	Ziska.....	"
Ed. Goldie.....	".....	Dwight.....	"

QUESTIONS RELATING TO DEER.—(Continued.)

Name.	Occupation.	Address.	County.
Frank Pokorney	Trapper	Huntsville	Muskoka
Samuel Green	Farmer	Bala	"
Wm. Jarvis	Purser	West Gravenhurst	"
D. F. McDonald	Agent	Parry Sound	"
H. Spencer	Harness-maker	McKellar	"
Ridley Appleby	Postmaster	Doe Lake	"
John Thom	Farmer	"	"
J. Vankoughnet	"	Falding	"
Henry Vankoughnet	"	"	"
Alfred Hunt	Banker	Bracebridge	"
Jas. Boyer	Town Clerk	"	"
J. C. Davidson	Clerk	"	"
Joe Ripkie	Stonemason	"	"
Singleton Brown	Shingle-miller	"	"
Richard Clarke	Farmer	Port Sydney	"
G. F. March	Steamboat Owner	Huntsville	"
Jas. Perry	Farmer	Bracebridge	"
Geo. Brown	Carpenter	"	"
E. J. Goulair	Farmer	Dwight	"
Joseph Clark	Merchant	Aspdine	"
John Green	Farmer	Bala	"
S. J. White	"	Whiteside	"
John Cooper	Hunter	Bracebridge	"
Wm. Craft	Farmer	Doe Lake	"
Donald Gordon	"	Magnetawan	"
W. H. Green	"	Grassmere	"
Daniel E. Hough	Mechanic	Port Carling	"
Thos. Currie	"	Bala	"
Jas. Clark	Farmer	Monsell	"
John May	"	Port Carling	"
Chas. White	"	Glen Orchard	"
Jas. Fowler	"	Lake of Bays	"
J. Board	Gentleman	Bala	"
C. Henderson	Bushranger	Bracebridge	"
N. H. Beemer	Physician	London	Middlesex.
John Pring	Lather	"	"
F. L. Trebilcock	Jeweller	"	"
E. R. Tammon	Barrister	"	"
M. J. Kemp	Banker	"	"
H. A. Nicholson	"	"	"
H. A. Stevenson	Med. Student	"	"
John Burns	"	"	"
E. A. Cleghorn	Wholesale Grocer	"	"
John Burns	Bailiff	"	"
A. G. Chisholm	Barrister	"	"
W. H. Allison	Train Despatcher	"	"
Duncan Johnson	Teacher	Wardsville	"
D. Shoff	License Inspector	Clandeboye	"
W. Thomson	Writer	East Saginaw	Michigan, U. S. A.
A. W. Lawrie	Merchant	Port Dover	Norfolk.
J. M. Salmon	Physician	Simcoe	"
Joseph T. Carson	Teacher	"	"
J. M. Sovereign	"	"	"
Wm. Tisdale	Barrister	"	"
H. H. Groff	Banker	"	"
John Matthews	"	"	"
J. W. Ryerson	"	"	"
J. L. Campbell	Gentleman	"	"
J. J. Walker	"	"	"
W. J. McInnis	Physician	Vittoria	"
T. J. Nimmo	Farmer	Bensfort	Northumberland.
J. W. Dinwoodie	Contractor	Campbellford	"
M. S. Cassan	Farmer	"	"
J. H. McMaster	Mariner	Brighton	"
C. Montgomery	Farmer	Hilton	"
T. C. Lockwood	Postmaster	Brighton	"
R. H. Bonnycastle	Farmer	Campbellford	"
F. Bonnycastle	"	"	"
R. Jessup	Hunter	North Bay	Nipissing.
Chas. Legris	Hotel-keeper	Nosbonsing	"

QUESTIONS RELATING TO DEER.—(Continued.)

Name.	Occupation.	Address.	County.
J. P. Kirkwood	Farmer	North Bay	Nipissing.
F. M. Comstock	Principal	LeRoy	New York, U. S. A.
H. Huntingford		Woodstock	Oxford
R. McLean	Farmer	Innerkip	"
Jas. Borland	"	"	"
Jn. Cowan	"	Bright	"
A. W. Gissing	Druggist	Princeton	"
Wm. Hersie	Farmer	"	"
Thos. Cuthbertson	Architect	Woodstock	"
H. Westcott	Hardware Merchant	Beaverton	Ontario.
C. A. Paterson	Municipal Clerk	"	"
A. Miller	Sportsman	Seagrave	"
J. McRae	Merchant	Beaverton	"
D. M. Card	Conveyancer	Uxbridge	"
Albert Orchard	Farmer	Seagrave	"
E. Moore	Salesman	Uxbridge	"
Geo. W. Dryden	Manufacturer	Port Perry	"
Arch. McLean	Farmer	Seagrave	"
John Barnes	"	Stanley House	Parry Sound.
Donald Ross	"	Turtle Lake	"
S. B. Purvis	Lumberman	Parry Sound	"
Thos. McGowan	Farmer	Featherstone	"
Jacob Joliffe	Lumberman	Parry Sound	"
Wm. Cargill	Farmer	Foley	"
Alex. Cargill	"	"	"
Wm. Fry	"	Monteith	"
Frank Lafex	Hotel-keeper	Parry Sound	"
Edward Taylor	Shoemaker	"	"
Wm. Ireland	Journalist	"	"
J. M. Anstey	Postmaster	"	"
J. R. Legatt	Watch-maker	"	"
W. L. Haight	Barrister	"	"
Dan. Starrat	Farmer	Starrat	"
John Davie	"	Doe Lake	"
Frank Johns	"	Nipissing Junction	"
Cyrus D. Lawrence	"	Sprucedale	"
C. W. Burns	Manufacturer	South River	"
Wm. McConnell	Labourer	Burk's Falls	"
John H. Bell	Bushranger	"	"
Wm. Pearce	Postmaster	Sprucedale	"
G. O. Smith	Fire Ranger	Burk's Falls	"
C. W. Burns, sr	Valuator	South River	"
T. J. Paget	Teacher	Restoule	"
H. R. Shaw	Landscape Painter	Ashdown Dist.	"
H. N. Crossley	Farmer	Rosseau	"
J. Ibbitson	"	Restoule	"
B. F. Kean	Sawlog Cutter	Parry Sound	"
J. Dinwoodie	Millwright	Lakefield	Peterboro.
W. A. Eastland	Grocer	"	"
Thos. P. Attrill	Gentleman	Peterboro	"
L. G. Steele	"	Lakefield	"
Geo. Cochrane	"	Peterboro	"
Wm. Brownscombe	Lock Master	"	"
Thos. Gordon	Canoe Builder	Lakefield	"
Thos. G. Eastland	Postmaster	Apsley	"
R. A. Morrow	Gentleman	Peterboro	"
Geo. Coones	Farmer	Apsley	"
John Lean	"	"	"
D. E. Strickland	Lumberman	Lakefield	"
Alex. Bell	Physician	"	"
W. H. Casement	Reeve	"	"
John E. Richardson	Canoe Builder	"	"
J. J. Welsh	Blacksmith	Apsley	"
R. C. Strickland	"	Lakefield	"
T. W. Gibbs	Agent	Peterboro	"
Wm. Hall	Merchant	Buckhorn	"
H. Calcutt	Brewer	Peterboro	"
John Bennett	"	"	"
H. Winch	Butcher	"	"
F. J. Moore	"	Lakefield	"

QUESTIONS RELATING TO DEER.—(Continued.)

Name.	Occupation.	Address.	County.
Wm. McFarlane	Hotel-keeper	Young's Point	Peterboro.
J. T. Lillicrap	Salesman	Lakefield	"
Thos. F. Wallace	Stock-dealer	"	"
Francis Ellenhurst	Reeve	Apsley	"
J. D. Collins	"	Peterboro	"
Geo. S. Sproule	Artist	"	"
Henry Couse	Grain Buyer	Cheltenham	Peel.
K. A. Chisholm	Accountant	Brampton	"
W. Couse	Apiarist	Streetsville	"
A. Lalondie	Farmer	Prescott	Prescott.
W. A. Anderson	"	Mountain View	Prince Edward.
A. C. Shaw	Barrister	Stratford	Perth.
Xavier Plaunt, jr	Clerk	Renfrew	Renfrew.
D. McLaren	Farmer	Sandpoint	"
Xavier Plaunt	"	Sebastopol	"
Thos. Hiland	Hunter	Warnock	"
D. W. Turner	Bank Manager	Arnprior	"
A. Hood	Commercial Traveller	"	"
Richard Thomas	Farmer	Deacon	"
Geo. Carr	Jobber	Point Alexander	"
John S. Box	Merchant	Calabogie	"
John Brady	Woodranger	Renfrew	"
John Scott	Gentleman	"	"
John Hunt	Farmer	Mt. St. Patrick	"
Wm. Maves	Trapper	Pembroke	"
Jn. J. Gorman	Farmer	Esmonde	"
John Martin	"	Rockingham	"
Frank Byers	"	Renfrew	"
Robt. Cameron	"	Horton	"
John McRae	Gentleman	Renfrew	"
Jas. Craig	Barrister	"	"
John Park	Gentleman	Horton	"
S. O'Gorman	Constable	Renfrew	"
Joseph Beggs	Farmer	Pembroke	"
J. D. Deacon	Physician	"	"
David Barr	Gentleman	Renfrew	"
James Neil	Hunter	Castleford	"
John McMullen	Farmer	"	"
Samuel Lett	"	Eganville	"
Robert Bowes	"	Tramore	"
A. H. Johnson	"	Castleford	"
Robert C. Miller	Publisher	Pembroke	"
Geo. Sutherland	"	Micksburg	"
Aaron Sweezy	"	Deux Rivières	"
Andrew Hamilton, jr	Farmer	Pembroke	"
Taylor Hamilton	"	"	"
Albert Brum	"	Alice	"
Aaron Burwash	Lumberman	Arnprior	"
Rd. Dultmage	Barrister	"	"
Arthur Burwash	Barrister	"	"
Arch. McPhie	Hotel-keeper	"	"
John Denninson	Farmer	Combermere	"
George D. Bayne	Minister	Pembroke	"
John Payne	Farmer	Sebastopol	"
R. D. Featherston	Agent	Arnprior	"
Adam W. Lindsay	Merchant	Renfrew	"
H. F. McLachlin	Lumber Merchant	Arnprior	"
R. A. Graham	Bushranger	Pembroke	"
Wm. Mahon	Farmer	Rockingham	"
John Sullivan	"	Lynedoch	"
Wm. Scott	"	Renfrew	"
Geo. W. Kidd	"	Pembroke	"
George Eavy, jr	Clerk Division Court	Renfrew	"
Angus McDonald	"	Carswell	"
Wm. McNab	Lumberman	Tramore	"
Alex. Parks	Farmer	Renfrew	"
Matthew Ryan	Bushranger	South Casselman	Russell.
Robert Cassells	Farmer	Embrun	"
Peter Lalondie	"	South Indian	"
Thomas Walker	"	Hawthorne	"

QUESTIONS RELATING TO DEER.—(Continued.)

Name.	Occupation.	Address.	County.
Gilbert Heron	Farmer	Billings Bridge	Russell.
Oscar Fulton	Merchant	Avonmore	Stormont.
James Cockburn	Lumberman	Edgar	Simcoe.
John Hutton	Hotel-keeper	Hutton House	"
Henry Fuller	Farmer	Minesing	"
Thos. Crosbie	"	Lisle	"
H. Jones	"	Sunnidale	"
Henry B. Nicol	Physician	Cookstown	"
D. Davidson	Lumberman	Penetanguishene	"
J. P. Kidd	"	Barrie	"
Thos. McQuary	Gentleman	"	"
George A. Jebb	Farmer	Cookstown	"
Francis Lockhart	"	Stayner	"
Wm. Watson	"	"	"
Gideon Strothurs	Lumberman	Hillsdale	"
W. C. Seluciles	Despatcher	Allandale	"
J. T. Harbourne	Farmer	Glen Orchard	"
John P. Secord	Superintendent	Orillia	"
Alfred Morren	Vet. Surgeon	Minesing	"
Arthur Schobey	Farmer	Alport	"
Wm. R. Rowland	Clerk	Collingwood	"
Richard Watson	Farmer	Stayner	"
Jesse E. Doner	"	"	"
W. H. Soden	Harness-maker	Hillsdale	"
Thomas Elliott	General Merchant	Cookstown	"
George Ross	Carpenter	Midland	"
Alex. Trumble	"	Hampshire Mills	"
Geo. Strathern	Jeweller	Midland	"
J. Gray, jr.	Merchant	Coldwater	"
F. J. Hammell	Vet. Surgeon	Tottenham	"
Jas. R. Croft	Barber	Beeton	"
J. O. Perry	Merchant	Orillia	"
Thos. A. Millichamp	Farmer	"	"
S. A. Whittaker	Druggist	Hillsdale	"
James Martin	Bailiff	"	"
Andrew McQuary	Farmer	Sunnidale	"
John Hisey	"	Cashtown	"
V. A. Hart	Agent	Dalston	"
Robert H. Ryan	Foreman	Port Severn	"
D. K. Ross	Farmer	Cookstown	"
Melchi Swalm	"	Nottawa	"
Ed. Bothie	"	Cookstown	"
Wm. Perry	"	Walker's Point	"
Wm. Mortimer	"	Mortimer's Point	"
W. F. Moore	Teacher	Cookstown	"
R. Wade	Gentleman	Orillia	"
Wm. Carr	Farmer	Bala	"
Jas. Mayhew	Vet. Surgeon	Cookstown	"
Redman McGrath	Carpenter	Lindsay	Victoria.
Nelson Bannier	Lumberman	Bobcaygeon	"
Norman Barnhart	"	"	"
James Purdy	Farmer	"	"
Charles E. Gunsoles	Saddler	"	"
J. Simpson	Physician	Lindsay	"
Seth Armitage	Farmer	Cambray	"
James Wells	Carpenter	"	"
Alex. Murray	Farmer	Kinmount	"
H. R. Herriman	Lumberman	Lindsay	"
John Howie	Farmer	Bury's Green	"
H. L. 'I'rie	"	Vankoughnet	"
Wm. Heedler	Mill Owner	Lindsay	"
James Dickson	P. L. Surveyor	Fenelon Falls	"
M. M. Boyd	Lumber Manufacturer	Bobcaygeon	"
J. G. Edwards	Hardware Merchant	Lindsay	"
A. Edgar	Lumberman	Bobcaygeon	"
W. H. Bottom	Steamboat Captain	"	"
Wm. Kennedy	Contractor	"	"
Robert Orby	Farmer	Cambray	"
Alfred Stephens	Woodranger	Fenelon Falls	"
Robert Hayes	Farmer	Bobcaygeon	"

QUESTIONS RELATING TO DEER.—(Continued.)

Name.	Occupation.	Address.	County.
A. Knowlson.....	.....	Lindsay.....	Victoria.
John Finigan.....	.....	".....	"
W. J. Davis.....	.....	".....	"
Henry Cohen.....	.....	".....	"
Fremont Crandell.....	.....	".....	"
Joseph Littell.....	.....	".....	"
Wm. Mulcahy.....	.....	".....	"
B. Bryan.....	.....	".....	"
Thomas Fee.....	Farmer.....	".....	"
Chas. Spillsbury.....	Gentleman.....	".....	"
R. H. Hopkins.....	Book-keeper.....	".....	"
J. N. Wallace.....	Woollen Manufacturer.....	".....	"
J. Woods.....	Physician.....	Kirkfield.....	"
J. C. Hood.....	.....	Lindsay.....	"
Wm. Gidley.....	Superintendent.....	Bobcaygeon.....	"
W. A. Goodwin.....	Merchant.....	Lindsay.....	"
G. Thornhill.....	Teamster.....	".....	"
A. W. De Grassi.....	Physician.....	".....	"
T. Crandell.....	Steamboat Captain.....	".....	"
Scott & Sadler.....	Hotel-keepers.....	Kinmont.....	"
E. Bottum.....	Lock Maker.....	Bobcaygeon.....	"
W. F. Richie.....	Postmaster.....	Gelert.....	"
F. Minnis.....	Book-keeper.....	Bobcaygeon.....	"
John Dixon.....	.....	Gelert.....	"
C. E. Bonnell.....	Physician.....	Bobcaygeon.....	"
W. J. Read.....	Merchant.....	".....	"
John Sedgwick.....	Farmer.....	Snowden.....	"
W. T. C. Boyd.....	Lumber Merchant.....	Bobcaygeon.....	"
A. E. Bottum.....	Merchant.....	".....	"
Wm. McCamus.....	Physician.....	".....	"
Ancil Mills.....	Engineer.....	Lindsay.....	"
N. B. Tribe.....	Farmer.....	Vankoughnet.....	"
Thos. Walters.....	.....	Lindsay.....	"
Capt. Rose.....	.....	".....	"
Alex. Ross.....	.....	".....	"
Jonathan Ellis.....	.....	".....	"
Wm. Thorndyke.....	.....	".....	"
George Brick.....	Forest ranger.....	Bobcaygeon.....	"
George Whistle.....	Butcher.....	Fenelon Falls.....	"
E. R. Edwards.....	Livery Stable Keeper.....	".....	"
A. Stevens.....	Miller.....	".....	"
Robert Aitkens.....	Farmer.....	Speedside.....	Wellington.
G. A. Richardson.....	Sect'y Guelph Gun Club.....	Guelph.....	"
J. Gibbs.....	Finisher.....	".....	"
A. C. Chadwick.....	Judge.....	".....	"
Andrew Ross.....	Merchant.....	Hamilton.....	Wentworth.
J. J. Steele.....	Maltster.....	".....	"
D. McGregor.....	Physician.....	Waterdown.....	"
A. Bowman.....	.....	Hamilton.....	"
Louis Snider.....	.....	".....	"
G. M. Hendrie.....	.....	".....	"
John I. McKenzie.....	Inspector.....	".....	"
Edwin Dalton.....	Farmer.....	Nelson.....	"
George McCurly.....	".....	".....	"
Dan. McLaren.....	".....	".....	"
Wm. Payne.....	Bolt Maker.....	Hamilton.....	"
David Maddock.....	Iron Finisher.....	".....	"
A. E. Malloch.....	Physician.....	".....	"
J. S. Hendrie.....	Contractor.....	".....	"
Albert Smith.....	.....	".....	"
John Smith.....	.....	".....	"
James Crooks.....	Hotel Keeper.....	".....	"
Thomas Hutchinson.....	Engineer.....	".....	"
E. Tinsley.....	".....	".....	"
Andrew Murdoch.....	Agent.....	".....	"
Henry Laws.....	Farmer.....	Effingham.....	Welland.
Joseph Garner.....	".....	Fenwick.....	"
John Mencke.....	.....	Toronto.....	York.
F. D. Mencke.....	Accountant.....	".....	"
Chas. Terry.....	Dentist.....	Newmarket.....	"

QUESTIONS RELATING TO DEER.—(Continued.)

Name.	Occupation.	Address.	County.
J. Murdoch	Sect'y Magnetawan Sport- ing Club	Parkdale	York.
R. H. Beatty	Merchant	Toronto	"
R. Wilson	Farmer	Sharon	"
W. A. Clark	Clerk of York Township	Eglington	"
R. Millichamp	Merchant	Toronto	"
Wm. Bassett	Farmer	Pine Orchard	"
J. B. Ross	Physician	Toronto	"
John B. Henderson	Sect'y Ochtwan Sporting Club	"	"
Wm. J. Middleton	Hotel-keeper	"	"
S. Scott	Physician	Newmarket	"
R. J. Talty	Shipping clerk	Toronto	"
T. S. Bayles	Superintendent	"	"
Isaac Dollery	Farmer	Fairbank	"
Alex. Ashinhurst	Clerk	Toronto	"
James Dixon	Photographer	"	"
S. J. Stammers	Banker	"	"
H. C. Matthews	Manager	"	"
John Fisher	Builder	Eglington	"
S. R. Clarke	Barrister	Toronto	"
F. F. Spies	Cartage Agent	"	"
J. T. Townsend	Inspector of telegraph	"	"
Richard Wells	Hotel-keeper	Aurora	"
H. D. Weaver	Student	Toronto	"
W. H. McConnell	Druggist	"	"
R. W. Gouinlock	Commercial Traveller	"	"

QUESTIONS RELATING TO DEER.

These questions were answered by the 650 witnesses before named as follows:—

1. What persons of your acquaintance can give information about deer?

Not necessary to answer here ; simply asked in order to send questions out to probable witnesses.

2. What deer hunting districts are you familiar with?

Not necessary to answer here ; asked with a view to testing the accuracy of answers given by witnesses.

3. About what time of year do does produce their young?

Answer—

March	-	-	-	-	-	-	-	29
April	-	-	-	-	-	-	-	135
May	-	-	-	-	-	-	-	255
June	-	-	-	-	-	-	-	100
July	-	-	-	-	-	-	-	1
Blank	-	-	-	-	-	-	-	130
								650

4. Should does be hunted while carrying their young?

Answer—

Yes	-	-	-	-	-	-	-	14
No	-	-	-	-	-	-	-	556
Blank	-	-	-	-	-	-	-	80
								650

5. How many does have you seen with one buck after the rutting season?

Answer—

One	-	-	-	-	-	-	-	28
Two	-	-	-	-	-	-	-	94
Three	-	-	-	-	-	-	-	74
Four	-	-	-	-	-	-	-	31
Five	-	-	-	-	-	-	-	34
Six	-	-	-	-	-	-	-	8

12. At what age do young does first take the buck ?

Answer—

Six months	-	-	-	-	-	-	23
Eight months	-	-	-	-	-	-	36
Nine months	-	-	-	-	-	-	12
Yearlings	-	-	-	-	-	-	164
Eighteen months	-	-	-	-	-	-	157
Three years	-	-	-	-	-	-	86
Blank	-	-	-	-	-	-	172
							<hr/> 650

13. What is the dressed weight of a yearling unskinned ?

Answer—

Twenty-five pounds	-	-	-	-	-	-	2
Forty pounds	-	-	-	-	-	-	13
Fifty pounds	-	-	-	-	-	-	50
Sixty pounds	-	-	-	-	-	-	119
Seventy pounds	-	-	-	-	-	-	47
Seventy-five pounds	-	-	-	-	-	-	110
Eighty pounds	-	-	-	-	-	-	68
Ninety pounds	-	-	-	-	-	-	23
One hundred pounds	-	-	-	-	-	-	69
One hundred and ten pounds	-	-	-	-	-	-	9
One hundred and twenty pounds	-	-	-	-	-	-	16
One hundred and thirty pounds	-	-	-	-	-	-	7
One hundred and fifty pounds	-	-	-	-	-	-	1
Blank	-	-	-	-	-	-	116
							<hr/>
							650

14. Should the killing of fawns or deer of less than that weight be forbidden ?

Answer—

Yes	-	-	-	-	-	-	327
No	-	-	-	-	-	-	192
Blank	-	-	-	-	-	-	121
							<hr/> 650

15. At what time of year are bucks in best condition for human food ?

Answer—

January	-	-	-	-	-	5
July	-	-	-	-	-	17

August	-	-	-	-	-	-	-	89
September	-	-	-	-	-	-	-	154
October	-	-	-	-	-	-	-	175
November	-	-	-	-	-	-	-	67
December	-	-	-	-	-	-	-	13
August to January	-	-	-	-	-	-	-	4
August to September	-	-	-	-	-	-	-	10
September to October	-	-	-	-	-	-	-	12
Blank	-	-	-	-	-	-	-	104
								<hr/> 650

16. Are does then in "prime condition ?

Answer—

Yes	-	-	-	-	-	-	-	409
No	-	-	-	-	-	-	-	138
Blank	-	-	-	-	-	-	-	103
								<hr/> 650

17. Should deer killing be entirely prohibited for a term of years, and if so for how long ?

Answer—

Yes	-	-	-	-	-	-	-	31
No	-	-	-	-	-	-	-	504
One year	-	-	-	-	-	-	-	1
Three years	-	-	-	-	-	-	-	32
Four years	-	-	-	-	-	-	-	3
Five years	-	-	-	-	-	-	-	41
Six years	-	-	-	-	-	-	-	11
Ten years	-	-	-	-	-	-	-	4
Blank	-	-	-	-	-	-	-	23
								<hr/> 650

18. Should the hounding of deer be forbidden ?

Answer—

Yes	-	-	-	-	-	-	-	249
No	-	-	-	-	-	-	-	376
Blank	-	-	-	-	-	-	-	25
								<hr/> 650

19. State your reasons for foregoing answer.

The witnesses opposed to dog hunting assert that deer are being fast exterminated by this method of hunting, and say that the deer are driven into and shot in the water, which is not sportsmanlike. They also say that the flesh of the deer gets heated after a long run and becomes unfit for food.

Those who favour dog hunting say that the opposition comes from the still hunters, who are said to kill far more than any other class of hunters. They say that when shot by still hunters, the deer often escapes wounded, to die a miserable death, or fall a prey to the wolves. They assert that the killing of deer in the water cools the flesh and makes it sweet and palatable.

20. Should runway shooting before hounds be forbidden; if so, why?

Answer—

Yes	-	-	-	-	-	-	-	-	249
No	-	-	-	-	-	-	-	-	376
Blank	-	-	-	-	-	-	-	-	25
									<hr/> 650

21. Should deer be allowed to be killed in the water?

Answer—

Yes	-	-	-	-	-	-	-	-	374
No	-	-	-	-	-	-	-	-	240
Blank	-	-	-	-	-	-	-	-	36
									<hr/> 650

22. State your reasons for foregoing answer.

Answer—

See answer to number 19.

23. Do summer fishing and camping parties often destroy deer?

Answer—

Yes	-	-	-	-	-	-	-	-	225
No	-	-	-	-	-	-	-	-	315
Blank	-	-	-	-	-	-	-	-	110
									<hr/> 650

★24. By what illegal means are deer often destroyed?

Answer—

Killing out of season	-	-	-	-	-	-	-	27
Wolves	-	-	-	-	-	-	-	11

Crust-hunting	-	-	-	-	-	-	276
Clubbing	-	-	-	-	-	-	1
Jack-lights	-	-	-	-	-	-	138
Snares	-	-	-	-	-	-	15
Dogs out of season	-	-	-	-	-	-	61
Blank	-	-	-	-	-	-	229

★25. Is crust-hunting much practiced ; if so, by what classes ?

Answer—

Yes	-	-	-	-	-	-	468
No	-	-	-	-	-	-	61
Pothunters	-	-	-	-	-	-	78
Farmers and settlers	-	-	-	-	-	-	309
All classes	-	-	-	-	-	-	20
Lumbermen	-	-	-	-	-	-	50
Indians	-	-	-	-	-	-	113
Blank	-	-	-	-	-	-	121

★26. Is summer “ marsh ” or “ jack-light ” hunting much practiced ; if so, by what classes ?

Answer—

Yes	-	-	-	-	-	-	138
No	-	-	-	-	-	-	264
Farmers and settlers	-	-	-	-	-	-	137
Fishing parties	-	-	-	-	-	-	10
All classes	-	-	-	-	-	-	17
Pothunters	-	-	-	-	-	-	41
Indians	-	-	-	-	-	-	57
Campers	-	-	-	-	-	-	12
Blank	-	-	-	-	-	-	248

27. In what districts of Ontario were deer formerly numerous, to your own knowledge ?

28. Are they numerous there now ?

29. If not, what has caused the scarcity ?

Answer—

Not necessary to answer the last three questions here ; asked with a view of obtaining information as to localities in which deer are still plentiful. The answers show that deer were abundant at one time all over the Province, but have been getting scarcer and scarcer, year by year, owing to the clearing up of the land, the advent of the settler, the railways, the wolves, and the indiscriminate and merciless slaughter of the pothunter and skin assassin.

30. The law now allows five deer per season to one hunter, eight to a party of two, twelve to a party of three, and no more than twelve to any party, no matter how numerous. Should this provision be changed; if so, in what respects, and what are your reasons for the answer?

Answer—

Present law satisfactory if enforced	-	-	-	398
In favour of killing as many deer as possible	-			29
In favour of reducing number to be killed, but without specifying number	-	-	-	22
Change party clause to 3-5-9	-	-	-	1
" " " 4-6-9	-	-	-	2
" " " 3-6-10	-	-	-	1
" " " 3-6-8	-	-	-	35
" " " 2-3-5	-	-	-	1
" " " 3-4-5	-	-	-	2
" " " 2-4-6	-	-	-	2
" " " 3-5-8	-	-	-	2
" " " 4-6-8	-	-	-	2
" " " 2-6-9	-	-	-	1
" " " 5-7-10	-	-	-	1
Allow 3 deer to each gun	-	-	-	16
Allow 6 deer to each gun	-	-	-	1
Allow 2 deer to each gun	-	-	-	26
Allow 1 deer to each gun	-	-	-	1
Allow 4 deer to each gun	-	-	-	1
Allow 5 deer to each gun	-	-	-	2
Blank	-	-	-	104
				650

31. Should foreigners be permitted to kill deer in Ontario?

32. If so, should they be required to pay for a permit? What price?

Answer—

Yes	-	-	-	-	-	-	278
No	-	-	-	-	-	-	329
Blank	-	-	-	-	-	-	43
							650

Those who do not answer in the affirmative are not in favour of allowing foreigners to shoot deer in Ontario under any circumstances.

Those who are in favour of allowing this privilege, are divided in opinion as to the propriety of charging a fee.

Half the witnesses think that a fee should be charged as a protective measure, whilst the other half favour free shooting on the ground that foreign sportsmen bring money into the country, and cause it to circulate freely.

33. Should the exportation of venison be prohibited?

34. Should the exportation of venison be permitted on a special fee for each carcass?

35. If so, what fee should be charged on each carcass?

Answer—

Yes	-	-	-	-	-	-	-	470
No	-	-	-	-	-	-	-	129
Blank	-	-	-	-	-	-	-	51
								<hr/> 650

Those who answer in the negative think that foreign sportsmen should be allowed to carry home the carcasses of the deer they shoot upon payment of a fee, for which a special permit would be given. The amount of the fee suggested varies from \$2 to \$50.

36. Present close season is from 20th November to 15th October of following year? Should this be changed?

37. If so, in what respects? Why?

Answer—

Present law satisfactory if enforced	-	-	-	215
In favour of shortening open season, but without specifying dates	-	-	-	6
In favour of lengthening open season	-	-	-	4
Wish hounding season extended to 15th Dec.	-	-	-	2
Wish hounding allowed all open season	-	-	-	1
Wish hounding allowed from 15th Oct. to 15th Nov.	-	-	-	3
Wish still hunting allowed from 15th Oct. to 15th Nov.	-	-	-	3
Wish still hunting allowed from 15th Nov. to 30th Nov.	-	-	-	3
Wish still hunting allowed from 1st Nov. to 15th Dec.	-	-	-	2

Think open season should be changed to—

1st Sept. to 1st Oct.	-	-	-	-	1
1st Sept. to 15th Oct.	-	-	-	-	1
1st Sept. to 25th Nov.	-	-	-	-	1
10th Sept. to 25th Dec.	-	-	-	-	1
15th Sept. to 30th Oct.	-	-	-	-	1
15th Sept. to 10th Nov.	-	-	-	-	8
15th Sept. to 15th Nov.	-	-	-	-	17
20th Sept. to 20th Oct.	-	-	-	-	1

20th Sept. to 20th Nov. -	-	-	-	-	-	1
25th Sept. to 1st Nov. -	-	-	-	-	-	2
1st Oct. to 15th Oct. -	-	-	-	-	-	1
1st Oct. to 7th Nov. -	-	-	-	-	-	2
1st Oct. to 10th Nov. -	-	-	-	-	-	4
1st Oct. to 15th Nov. -	-	-	-	-	-	4
1st Oct. to 20th Nov. -	-	-	-	-	-	7
1st Oct. to 1st Dec. -	-	-	-	-	-	2
1st Oct. to 15th Dec. -	-	-	-	-	-	2
1st Oct. to 1st Jan. -	-	-	-	-	-	3
10th Oct. to 15th Nov. -	-	-	-	-	-	5
15th Oct. to 15th Nov. -	-	-	-	-	-	5
15th Oct. to 30th Nov. -	-	-	-	-	-	11
15th Oct. to 1st Dec. -	-	-	-	-	-	5
15th Oct. to 15th Dec. -	-	-	-	-	-	6
15th Oct. to 20th Dec. -	-	-	-	-	-	4
20th Oct. to 1st Nov. -	-	-	-	-	-	3
20th Oct. to 1st Dec. -	-	-	-	-	-	11
20th Oct. to 15th Dec. -	-	-	-	-	-	1
20th Oct. to 20th Dec. -	-	-	-	-	-	2
25th Oct. to 20th Nov. -	-	-	-	-	-	5
25th Oct. to 10th Dec. -	-	-	-	-	-	2
1st Nov. to 20th Nov. -	-	-	-	-	-	7
1st Nov. to 30th Nov. -	-	-	-	-	-	33
1st Nov. to 5th Dec. -	-	-	-	-	-	21
1st Nov. to 15th Dec. -	-	-	-	-	-	30
1st Nov. to 30th Dec. -	-	-	-	-	-	2
5th Nov. to 10th Dec. -	-	-	-	-	-	1
10th Nov. to 1st Dec. -	-	-	-	-	-	1
15th Nov. to 1st Dec. -	-	-	-	-	-	2
20th Nov. to 15th Dec. -	-	-	-	-	-	2
Blank -	-	-	-	-	-	193

 650

The reasons given for the changes suggested are manifold; some want the open season made earlier for the sake of dog hunting; others desire that it should be made later, so as to favour the still hunter.

Some think the present season begins too early, and that the deer do not keep well until 1st Nov., and others suggest a season which happens to suit their own convenience.

★38. Is the close season commonly disregarded, and by what classes?

Answer—

Yes	-	-	-	-	-	-	-	484
No	-	-	-	-	-	-	-	80
Farmers and settlers	-	-	-	-	-	-	-	255
Indians	-	-	-	-	-	-	-	56
Pot-hunters	-	-	-	-	-	-	-	93
Lumbermen	-	-	-	-	-	-	-	95
All classes	-	-	-	-	-	-	-	78
Blank	-	-	-	-	-	-	-	83

39. Would there be any reasonable objection against allowing pioneer settlers to kill deer for their own families' food at all seasons, if they were effectually prevented from killing deer except for family food ?

Answer -

Yes	-	-	-	-	-	-	-	359
No	-	-	-	-	-	-	-	231
Blank	-	-	-	-	-	-	-	60
								<hr/> 650

40. What are your reasons for foregoing answer ?

The witnesses who answer in the affirmative think that it would be a dangerous thing to allow this privilege, inasmuch as it would be abused immediately.

Those who answer in the negative think that the settler who has often to depend for food upon the game he shoots should be allowed to shoot at all seasons, for the pot, when necessary.

41. Do you favour the establishment of a special service of game protectors or wardens, to enforce the game laws ?

Answer—

Yes	-	-	-	-	-	-	-	551
No	-	-	-	-	-	-	-	70
Blank	-	-	-	-	-	-	-	29
								<hr/> 650

42. If so, should the sub-wardens be residents of localities under their charge ?

Answer—

Yes	-	-	-	-	-	-	-	437
No	-	-	-	-	-	-	-	115
Blank	-	-	-	-	-	-	-	98
								<hr/> 650

43. What are your reasons for foregoing answer ?

Answer—

Those who favour the appointment of local men think that they would be more efficient than strangers on account of knowing the localities and the people.

Those who favour the appointment of strangers think that outside men would make the best wardens as being fearless, and more likely to act without favour or ill-will.

MOOSE, CARIBOU, ELK.

44. In what parts of Ontario have you found any and which of these animals?

Moose in district of

Caribou " "

Elk " "

Not necessary to answer here; asked for the purpose of testing the accuracy of witnesses.

45. Should the present prohibition against killing these animals be extended beyond October, 1895?

Answer—

Yes	-	-	-	-	-	-	-	-	86
No	-	-	-	-	-	-	-	-	238
Blank	-	-	-	-	-	-	-	-	326
									<hr/> 650

Is the prohibition generally respected where these animals are found?

Answer—

Yes	-	-	-	-	-	-	-	-	49
No	-	-	-	-	-	-	-	-	265
Blank	-	-	-	-	-	-	-	-	336
									<hr/> 650

★The answers to this question do not tally in addition with the number of the witnesses, because many of the persons answering have given more than one reply.

QUESTIONS RELATING TO BIRDS.

The questions prepared on this subject by your Commissioners were answered by 485 persons, as follows:—

Name.	Occupation.	Address.	County.
Thos. Penfold.....	Gaoler.....	Port Arthur.....	Algoma.
Jno. Forde.....	Fur Trader.....	Schrieber.....	"
Thos. Frood.....	Farmer.....	Little Current.....	"
Wm. La Rush.....	Fisherman.....	Kagawong.....	"
Cecil Swale.....	Farmer.....	Warton.....	Bruce.
Joseph Robinson.....	Merchant.....	".....	"
Geo. Marr.....	Banker.....	Lucknow.....	"
John H. Garnier.....	Physician.....	".....	"
Wm. O'Leary.....	Farmer.....	Loretto.....	Cardwell.
G. C. Rainboth.....	P. L. S.....	Ottawa.....	Carleton.
F. G. Vanderlip.....	Hotelkeeper.....	".....	"
J. B. Spence.....	".....	".....	"
W. P. Lett.....	City Clerk.....	".....	"
Henry R. Smith.....	Lt. Colonel.....	".....	"
John Stewart.....	P. L. Surveyor.....	".....	"
W. R. McEwan.....	Geological Survey Dept.....	".....	"
H. D. J. Lane.....	Militia Department.....	".....	"
Louis Consolles.....	Patent Aegnt.....	".....	"
W. P. Batterton.....	Book-keeper.....	".....	"
P. A. McDougall.....	Physician.....	".....	"
A. H. Johnston.....	Farmer.....	Castleford.....	"
F. H. F. Mercer.....	Gentleman.....	Ottawa.....	"
T. G. Carpenter.....	Agent.....	Arnprior.....	"
W. J. Topley.....	Photographer.....	Ottawa.....	"
W. W. Boucher.....	Veterinary Surgeon.....	South March.....	"
Geo. C. Wood.....	Post Office Department.....	Ottawa.....	"
T. W. E. Sowter.....	Draughtsman.....	".....	"
J. C. Fox.....	President Orangeville Gun Club.....	Orangeville.....	Dufferin.
Job Dickinson.....	Farmer.....	Zion.....	Durham.
R. Dinner.....	".....	".....	"
H. H. Burnham.....	Mayor.....	Port Hope.....	"
John Steen.....	Taxidermist.....	Newcastle.....	"
A. White.....	Lumberman.....	Orivell.....	Elgin.
Victor Pellow.....	Carriage Manufacturer.....	Vereker P. O.....	Essex.
Geo. Goodman.....	Builder.....	Windsor.....	"
Dan. J. Revell.....	Conductor.....	".....	"
Wm. Donaldson.....	Painter.....	".....	"
C. L. Paré.....	Manufacturer.....	".....	"
R. Vigneaux.....	Carpenter.....	".....	"
Albert Drouillard.....	Custom's Officer.....	".....	"
Joseph Winter.....	Pork Packer.....	".....	"
Geo. Cheyne.....	Sec'y Windsor Keystone Gun Club.....	".....	"
C. F. Cornetet.....	".....	Bell River.....	"
P. C. Ponting.....	Prop. Windsor Truck Co.....	Windsor.....	"
Wm. H. Gattfield.....	Steamboat Captain.....	".....	"
John Gordon.....	Farmer.....	Parham.....	Frontenac.
M. Cronk.....	".....	".....	"
Robt. Clow.....	".....	".....	"
T. Sharman.....	Boat Builder.....	Kingston.....	"
J. H. Borkwood.....	Rod Maker.....	".....	"
Wm. A. Wagar.....	Farmer.....	Parham.....	"
Thos. A. Casson.....	Merchant.....	Kingston.....	"
H. Stratford, Jr.....	Taxidermist.....	".....	"
H. Stratford.....	".....	".....	"
Robt. J. Mills.....	Insurance Agent.....	".....	"
Jas. Gladstone.....	Bartender.....	Owen Sound.....	Grey.
W. P. Talford, Jr.....	Law Student.....	".....	"
E. S. Rogers.....	Veterinary Surgeon.....	Meaford.....	"
S. A. Beck.....	Farmer.....	South Cayuga.....	Haldimand.
John Farrell.....	".....	".....	"
Isaac Wismer.....	".....	".....	"
W. G. Wismer.....	".....	".....	"
S. W. Hornbrook.....	".....	Dun ville.....	"

QUESTIONS RELATING TO BIRDS—*Continued.*

Name.	Occupation.	Address.	County.
Fred. Lowe		Dunnville	Haldimand.
Martin Green		"	"
Jno. Green		"	"
Wm. McIndoe		"	"
Freeman Green		"	"
J. C. Eccles		"	"
Jas. Smith		"	"
Jas. Clifford		"	"
Wm. Lambier		"	"
Jas. Vanderburg		"	"
Lewis Fox		"	"
J. F. Crawford	Farmer	"	"
Wm. Sweet	"	Bancroft	Hastings.
A. G. Allison	Despatcher G. T. Ry	Belleville	"
John McAllister	Farmer	Bird's Creek	"
G. Holmes	"	St. Ola	"
Fred. Mullett	Hotelkeeper	Bancroft	"
E. B. Fralick	County Judge	Belleville	"
E. N. Leavens		"	"
J. N. Pringle		"	"
Fred. Root		"	"
J. W. Loudon		"	"
Geo. Twining	Painter	"	"
J. T. Bell	Physician	Frankford	"
D. R. Leavens	Farmer	Belleville	"
Geo. Pattison	Farmer	Coe Hill	"
T. J. Moore	"	St. Ola	"
W. Turner	"	Faraday	"
Thos. Nugent	"	Nugent	"
C. Baragar	"	Sine	"
R. C. Fair	Stone Merchant	Bancroft	"
Bidwell Sine	Farmer	Harold	"
J. C. George	Postmaster	Bancroft	"
Henry Foster	Farmer	Faraday	"
J. W. Ham	"	St. Ola	"
J. Stonebug	Policeman	Belleville	"
R. S. Tiny	Merchant	Coe Hill	"
Peter Wright	Farmer	St. Ola	"
Wm. S. Clarke	"	Holloway	"
Fred. B. Lacey	"	Beechmount	"
H. Dennison	"	Purdy	"
J. T. Bell	County Clerk	Belleville	"
Edward Johnson	Bush Ranger	Bancroft	"
Thos. Ireland	Farmer	Nelson	Halton.
A. Clements	Farmer	Trafalgar	"
Wm. Panton	Editor	Milton	"
Joseph Wilson	Farmer	Ash	"
John Boyes	"	Nelson	"
Caleb Lousley	"	Trafalgar	"
Edwin Dalton	"	Nelson	"
Geo. McCurley	"	"	"
Daniel McLaren	"	"	"
W. J. Austin	Merchant	Haliburton	Haliburton.
C. S. Austin	Gentleman	"	"
Geo. Bemister	Civil Engineer	"	"
Jas. Worley	Cabinetmaker	"	"
John Reid	Carpenter	"	"
J. Lucas	Hotelkeeper	"	"
E. Leith	Merchant	"	"
P. O'Conner	Trapper	"	"
C. R. Stewart	Gentleman	"	"
Joseph Kellett	Hotelkeeper	"	"
Joseph Paul	Butcher	"	"
Stephen Dawson	Farmer	"	"
Fred. Freeman	Merchant	"	"
L. M. Neily	Shoemaker	"	"
John Sedgewick	Farmer	Gelert	"
Geo. Tutt	Guide	Dorset	"
Geo. Gregory	Farmer	Wicksteed	"
Thos. Scott	"	Kennaway	"

QUESTIONS RELATING TO BIRDS—*Continued.*

Name.	Occupation.	Address.	County.
Wm. Weldon		Morpeth	Kent.
D. R. Watson	Caretaker	"	"
Samuel Burk	Farmer	Blenheim	"
Chas. Eastlake	Merchant	Ridgetown	"
H. J. O'Lone	Hardware Merchant	Ridgetown	"
M. Massey	Farmer	Chatham	"
Jas. Kime	Veterinary Surgeon	"	"
C. Wheeler	Merchant	"	"
D. Smith	Farmer	"	"
Albert Williams	"	"	"
Abraham Alexander, jr.	"	Dover	"
Jas. Rankin	"	"	"
T. H. Nelson	Bailiff	Chatham	"
Jas. Hamilton	Fisherman	Jeannette's Creek	"
John Houstor	Farmer	Harwich	"
Henry Dagreau	Hardware Merchant	Chatham	"
H. A. Crow	Farmer	Raleigh	"
W. A. Campbell	County Clerk	Chatham	"
J. Benson Reynolds	Merchant	Rond Eau	"
Wellford Watson	Farmer	"	"
Wm. Mallory	"	Guilds	"
W. Ridley	Blacksmith	Ridley	"
W. E. Hall	Insurance Agent	Blenheim	"
W. B. Wells	Clerk	Chatham	"
John Mercer	Sheriff	"	"
Gordon Boles	Captain	"	"
I. L. Nichols	Dentist	"	"
Jas. Thomas	Farmer	Raleigh	"
Wm. Crow	"	Dover	"
Samuel Holmes	Merchant	Chatham	"
Albert Wilcox	Farmer	Dover	"
G. A. Laver	Law Student	Chatham	"
David Wilson	Farmer	Harwich	"
Jas. McGarvin	"	"	"
P. McGarvin	"	Dover	"
Alex. Ducedre	"	"	"
Geo. Kime	"	"	"
Abraham Alexander, jr.	"	"	"
J. B. Gillard	"	Wallaceburg	"
Wm. L. Cameron	"	Harwich	"
P. D. Bates	Fisherman	Ridgetown	"
T. B. Gillard	Banker	Wallaceburg	"
Marshall Burk		Blenheim	"
James Armstrong	Dentist	Almonte	Lenark.
Isaac Horny	Saw and Shingle Manfr.	Maberly	"
F. McEwen	Physician	Carleton Place	"
Duncan Campbell	Tailor	Almonte	"
G. H. Gilbert	Hairdresser	"	"
Francis Van De Bogart	Ranchman	Lennox	Lennox & Addington.
Ed. Senecal	Oarsman	Rockport	"
James Fitzpatrick	Mechanic	Brockville	Leeds.
Neil McLean	Banker	"	"
G. R. Griffin	"	"	"
Jas. Paton	Gentleman	Beamsville	Lincoln.
S. D. Woodruff		St. Catharines	"
H. J. Dawson	Barrister	Petrolia	Lambton.
Wm. Hutchinson	Oil Merchant	Detroit	Michigan, U. S. A.
W. J. Higham	Tanner	"	"
W. Thomson	Writer	East Saginaw	"
John Telfer		Ziska	Muskoka.
W. J. Miller	Farmer	Vankoughnet	"
Ed. Goldie	"	Dwight	"
Geo. E. Langford	"	Bracebridge	"
John Wasdell	Butcher	"	"
J. Vankoughnet	Farmer	Falding	"
H. Vankoughnet	"	"	"
Donald Gordon	"	Magnetawan	"
E. J. Gouldie	Hunter	Dwight	"
J. B. Wallis	General Merchant	Port Carling	"

QUESTIONS RELATING TO BIRDS—*Continued.*

Name.	Occupation.	Address.	County.
Singleton Brown	Lumberman	Bracebridge	Muskoka.
Chas. B. Riley	Farmer	Milford Bay	"
Jas. Clark	"	Monsell	"
Thos. Salmon	"	Dwight	"
Wm. Craft	Farmer	Doe Lake	"
J. Board	"	Bala	"
C. Sawyer	Guide	Dorset	"
E. F. Stephenson	Journalist	Bracebridge	"
Frank Kent	Veterinary Surgeon	"	"
Alfred Hunt	Banker	"	"
Jas. Boyer	Township Clerk	"	"
J. C. Davidson	Clerk	"	"
J. Ripke	Stonemason	"	"
Jno. A. Dale	Miller	Lake of Bays	"
Robt. Robinson	Jailer	Bracebridge	"
Chas. Maudsley	Clerk	"	"
H. McGinnis	"	"	"
Jas. Hall	Farmer	Stephenson	"
J. Wardell	"	Dorset	"
Jas. Hillman	Tinsmith	"	"
H. J. King	Butcher	Gravenhurst	"
W. H. Green	Farmer	Grassmere	"
Thos. Currie	"	Bala	"
Henry Achesie	Yeoman	Bardsville	"
Geo. Brown	Carpenter	Bracebridge	"
W. G. Stewart	Farmer	Brackenrig	"
John Telfer	"	"	"
Harris Demara	"	Baysville	"
Ridley Appleby	Postmaster	Doe Lake	"
John Thom	Farmer	"	"
Erastus Haes	"	Utterson	"
M. Austin	"	"	"
Wm. S. Terry	Settler	Vankoughnet	"
Chas. White	"	Glen Orchard	"
John May	Farmer	Port Carling	"
A. Monteith	Hunter	Rosseau	"
J. Monteith	Hotel Proprietor	"	"
Duncan Johnson	Teacher	Wardsville	Middlesex.
J. D. Niven	Member of Gun Club	London	"
J. H. Fraser	"	"	"
Wm. Woodruff	"	"	"
W. T. Strong	"	"	"
H. S. Blackburn	"	"	"
Geo. Gibbons	"	"	"
J. C. Holmes	"	"	"
N. H. Beemer	Physician	"	"
J. Pring	Lather	"	"
F. L. Trebilcock	"	"	"
E. R. Tammon	Barrister	"	"
M. J. Kemp	Banker	"	"
H. A. Nicholson	"	"	"
H. A. Stevenson	Med. Student	"	"
John Burns	"	"	"
E. A. Cleghorn	Wholesale Grocer	"	"
L. McDonald	Dentist	"	"
W. C. Gill	Registrar	"	"
W. T. Williams	Chief of Police	"	"
E. A. Sayer	Barrister	"	"
C. W. Davis	Hotelkeeper	"	"
Wm. Avey	"	"	"
T. J. Hammond	"	"	"
W. H. Allison	Train Despatcher	"	"
R. G. Mercer	Post Office Dep't.	"	"
W. Fell	"	"	"
Simeon Peacock	Merchant	Delaware	"
T. C. Lockwood	Postmaster	Brighton	Northumberland.
J. W. Dinwoodie	Contractor	Campbellford	"
T. J. Nimmo	Farmer	Bensfort	"
J. H. McMaster	Sailor	Brighton	"

QUESTIONS RELATING TO BIRDS—*Continued.*

Name.	Occupation.	Address.	County.
R. H. Bonnycastle.....	Farmer	Campbellford	Northumberland.
John Piche	Wood Ranger	Sudbury	Nipissing.
Jessup Richard.....	Hunter.....	North Bay	"
R. H. Elliott	Station Agent	Nosbonsing	"
Joseph T. Carson	Teacher	Simcoe	Norfolk.
Clarence C. Rapeljie	County Clerk	"	"
Wm. E. Tisdale	Barrister.....	"	"
H. H. Groff	Bunker.....	"	"
John Matthews	"	"	"
J. W. Ryerson.....	"	"	"
J. Lorne Campbell.....	Gentleman	"	"
J. M. Salmon	Physician	"	"
S. M. Sovereign	"	"	"
Jas. Duncan.....	"	Forestville	"
Walter Anderson	"	Normandale.....	"
Ed. Parker.....	"	"	"
W. F. Nickerson.....	"	Simcoe	"
W. J. McInnes	Physician	Vittoria	"
W. J. Finlay	Clergyman	Simcoe	"
A. W. Lawrie	Merchant	Port Dover	"
Arthur Miller	Sportsman	Seagrave	Ontario.
John McRae	Merchant	Beaverton	"
Albert Orchard	Farmer	Seagrave	"
H. Westcott	Hardware Merchant.....	Beaverton	"
C. A. Paterson	Municipal Clerk.....	"	"
Arch. McLean	Farmer	Seagrave	"
E. Moore	Salesman	Uxbridge	"
A. N. Gissing	Druggist	Princeton	Oxford.
Robt. McLean	Farmer	Innerkip	"
John Cowan	"	Bright	"
Wm. Hersie	"	Princeton	"
Thos. Cuthbertson.....	Architect	Woodstock	"
Jas. Hart	Merchant	Demorestville	Prince Edward.
W. A. Anderson	Farmer	Mountain View.....	"
Geo. H. Boulter	"	Demorestville	"
K. A. Chisholm	Accountant	Brampton	Peel.
Thos. F. Carr	Farmer	Trout Creek	Parry Sound.
C. W. Burns	Timber Explorer	South River	"
C. W. Burns, jr	Manufacturer	"	"
Geo. Whistle	Butcher	Fenelon Falls	"
E. R. Edwards	Livery Stable keeper.....	"	"
A. Stevens	Miller	"	"
B. F. Kean	Lumber Culler	Parry Sound	"
J. Barnes	Farmer	Joseph Lake	"
Gideon O. Smith	Fire Ranger	Burk's Falls	"
Jas. Dickson	"	"	"
John Sedgewick.....	Farmer	Snowden	"
John H. Bell	Bushranger	Burk's Falls	"
Wm. McConnell.....	Labourer	"	"
Thos. J. Paget	Teacher	Restoule	"
Cyrus D. Lawrence	Farmer	Sprucedale	"
S. B. Purvis	Lumberman	Parry Sound	"
Thos. McGowan.....	Farmer	Featherstone	"
Jacob Joliffe	Lumberman	Parry Sound	"
Wm. Fry	Farmer	Monteith	"
Wm. Cargill	"	Foley	"
Frank Lafex	Storekeeper	Parry Sound	"
Ed. Taylor.....	Shoemaker	"	"
Wm. Ireland	Journalist	"	"
J. M. Anstey	Postmaster	"	"
J. R. Legatt	Watchmaker	"	"
W. L. Haight	Barrister.....	"	"
Dan Starrat	Farmer	Starrat	"
H. Spencer	Harnessmaker	McKellar	"
John Abbitson	Farmer	Restoule	"
John Clark	"	"	"
Wm. McFarlane.....	Hotel-keeper	Young's Point	Peterborough.
G. W. Coones	Farmer	Apsley	"
Geo. S. Sproule	Artist	Peterborough.....	"

QUESTIONS RELATING TO BIRDS—*Continued.*

Name.	Occupation.	Address.	County.
J. D. Collins		Peterborough	Peterborough.
Wm. Hall		Buckhorn	"
H. Calcutt		Peterborough	"
P. C. Strickland		Lakefield	"
T. W. Gibbs		Peterborough	"
John Bennett		"	"
L. G. Steele		Lakefield	"
John Richardson		"	"
George Cochrane		Peterborough	"
Wm. Brownscombe		"	"
Alex. Bell	Physician	Lakefield	"
J. J. Welsh	Blacksmith	Apsley	"
Alex. Paterson		Peterborough	"
R. E. Wood		"	"
R. Watson		"	"
R. Tivey		"	"
G. A. Farmer	Banker	Montreal	Quebec.
John Park	Gentleman	Horton	Renfrew.
S. O'Gorman	Constable	Renfrew	"
Jos. Biggs	Farmer	Pembroke	"
J. D. Deacon	Physician	"	"
David Barr	Gentleman	Renfrew	"
John Hunt	Farmer	Blythfield	"
Aaron Swezey		Deux Rivieres	"
Alex. Parks	Farmer	Eganville	"
Geo. D. Bayne	Minister	Pembroke	"
Wm. Maves		"	"
R. A. Graham		"	"
Wm. Scott	Farmer	Renfrew	"
George Sutherland		Micksburg	"
George Carr	Farmer	Point Alexander	"
Richard Thomas	"	Deacon	"
Frank Byers	"	Renfrew	"
Robert Cameron	"	Horton	"
John McRae	Gentlemen	Renfrew	"
James Craig	Barrister	"	"
Jn. J. Gorman	Farmer	Esmonde	"
Xavier Plaunt	"	Sebastopol	"
Xavier Plaunt, jr.	Hotel Clerk	Renfrew House	"
Donald McLaren	Farmer	Sandpoint	"
Frank J. Hammell	Veterinary Surgeon	Tottenham	Simcoe.
John Secord	Supt. Red Cross Hospital	Orillia	"
Gideon Strothers	Lumberman	Hillsdale	"
H. B. Nichol	Physician	Cookstown	"
Francis Lockhart	Farmer	Stayner	"
Wm. Watson	"	"	"
Thomas A. Millichamp	"	Orillia	"
D. Somerville	"	Stayner	"
James Cockburn	"	Edgar	"
R. Wade	Gentleman	Orillia	"
William Mortimer	Farmer	Mortimer's Point	"
Richard Watson	"	Stayner	"
Jesse E. Doner	"	"	"
J. O. Perry	Merchant	Orillia	"
George Strathern	Jeweller	Midland	"
J. Randolph	Barber	Beeton	"
W. H. Soden	Harnessmaker	Hillsdale	"
Andrew McQuay	Farmer	Sunnidale	"
W. E. Seluciles	Storekeeper	Allandale	"
Thomas Elliott	General Merchant	Cookstown	"
J. P. Kidd		Barrie	"
Thomas Crosbie	Farmer	Lisle	"
Albert Johnson	Druggist	Collingwood	"
John Gray, jr.	Merchant	Coldwater	"
Ed. Bathie	Farmer	Cookstown	"
John T. Hutton	"	Hutton House	"
H. Jones	"	Sunnidale	"
E. A. Knowlson		Lindsay	Victoria.
H. Ryans	Carpenter	"	"

QUESTIONS RELATING TO BIRDS—*Continued.*

Name.	Occupation.	Address.	County.
J. L. Sadler	Miller	Lindsay	Victoria.
T. Sadler	"	"	"
Wm. Mulcahy	"	"	"
Henry Cohan	"	"	"
B. Bryan	Contractor	"	"
Fremont Crandell	Engineer	"	"
Joseph Littel	"	"	"
John Finigan	Farmer	"	"
A. J. Davis	"	"	"
John Kinnear	Miller	"	"
Thomas Fee	Farmer	"	"
A. E. Bottum	Lockmaker	Bobcaygeon	"
H. R. Herriman	"	Lindsay	"
James D. Knowlson	Insurance Agent	"	"
A. W. DeGrassi	Physician	"	"
Ed. Mosgrove	Teacher	Kirkfield	"
E. R. Edwards	"	Fenelon Falls	"
Alex. Murray	Farmer	Kinmount	"
W. T. C. Boyd	Merchant	Bobcaygeon	"
Scott & Sadler	Hotel-keepers	Kinmount	"
W. J. Read	Merchant	Bobcaygeon	"
C. E. Bonnell	Physician	"	"
H. Llewellyn Tribe	Hunter	Vankoughnet	"
N. B. Tribe	Farmer	"	"
Charles Gunsoles	Saddler	Bobcaygeon	"
Franklin Crandell	Steamboat Captain	Lindsay	"
Redman McGrath	Carpenter	"	"
Joseph Garner	Farmer	Fenwick	Welland.
John Hannon	Hotel-keeper	Thorold	"
J. C. Hull	Merchant	Falls View	"
J. T. Garrett	Tailor	"	Wellington.
M. Pettit	Grocer	"	"
A. L. Wilson	Gentleman	"	"
C. C. Spencer	"	"	"
R. Webster	"	Guelph	"
Thomas Goldie	Miller	"	"
G. A. Richardson	Secy. Guelph Gun Club	"	"
A. C. Chadwick	Judge	"	"
J. Gibbs	Finisher	"	"
Robert Aitken	Farmer	Speedside	"
S. Duffield	"	Eramosa	"
A. E. Malloch	Physician	Hamilton	Wentworth.
T. Dalton	"	"	"
S. Joyce	"	"	"
R. Æ. Kennedy	Journalist	"	"
J. I. McKenzie	Inspector	"	"
Andrew Ross	Merchant	"	"
T. L. Stephens	Wild Fowls' Gun Club	"	"
E. V. Spencer	Wild Fowls' Gun Club	"	"
J. S. Hendrie	Contractor	"	"
Albert Smyth	"	"	"
J. Smith	"	"	"
Jas. Crooks	"	"	"
Thos. Hutchinson	"	"	"
E. Tinsley	Engineer	"	"
Geo. M. Hendrie	"	"	"
A. MacKeand	"	"	"
Wm. Payne	Bolt-maker	"	"
David Maddocks	Iron Finisher	"	"
S. J. Stammers	Banker	Toronto	York.
J. F. W. Ross	Pres. Ochlwin Sporting Club	"	"
J. B. Henderson	Sec'y Ochlwin Sporting Club	"	"
John Mackelcan	Farmer	"	"
R. W. Gouinlock	Com. Traveller	"	"
Chas. A. Terry	Dentist	Newmarket	"
Richard Wells	Hotel-keeper	Aurora	"
W. H. McConnell	Druggist	Toronto	"

QUESTIONS RELATING TO BIRDS—*Concluded.*

Name.	Occupation.	Address.	County.
H. D. Weaver.....	Fur dealer	Toronto	York.
John Fisher....	Builder	Eglington .	"
W. A. Clark	Clerk of York Township.	"	"
S. G. Beatty	Publisher	Toronto	"
H. J. Maughan	Insurance agent	"	"
John W. Mencke	"	"	"
David Kennedy	Gentleman	"	"
Rodney Wilson	Farmer	Sharon	"
I. Dollery	"	Fairbank	"

ONTARIO GAME AND FISH COMMISSION.

QUESTIONS RELATING TO BIRDS.

The answers to these questions have been grouped according to counties. It has been thought advisable to do this on account of the difference of opinion expressed by the witnesses in different parts of the Province, regarding the close and open seasons. Your Commissioners have found that the seasons differ materially even in districts which closely adjoin each other, and it is thought, therefore, that the following tables may prove a useful basis of enquiry for a permanent commission, in the event of the appointment of such a body.

N.B.—Question 15 and the answers thereto are worthy of special attention. Those who answer in the affirmative think that much benefit would accrue from a uniform season, and that many birds which are now shot out of season would be spared if one common shooting season existed.

Some of those who answer in the negative are evidently actuated by selfish motives and wish to continue shooting at all times and in all seasons.

Others again, allege that in the particular localities in which they reside, much legitimate sport would be lost if the common shooting season was established.

It is pleasing to note, however, that the real sportsmen who have come before your Commissioners to give evidence on this point have been invariably willing to sacrifice much of their own shooting in order that general good might result, which they claim would be the case if a general short season for shooting was adopted.

1. Where are you accustomed to observe or shoot any of the following wild birds?

Name of bird.	County of	When arrive in spring.	When leave in autumn.	Do they breed here.
GROUSE: (<i>Pheasant</i>) Ruffed Grouse, or Birch Partridge.. Canada Grouse, or Spruce Partridge.. Pennated Grouse, or Prairie Chicken... Sharp Tailed Grouse				
QUAIL.....				
TURKEY.....				
WOODCOCK.....				
SNIPE: Common, or Wilson's Pectoral Sandpiper, or Jack Snipe..... Redbreasted.....				
RAIL: Sora, or Carolina ... King..... Virginia				
PLOVER: Golden..... Tall Tale, or Greater Yellow Shanks ... Lesser Yellow Shanks Curlew				
SWAN: Whistling				
GEESE: Brant				
Canada				
Snow				
DUCKS: Gadwall..... Redhead				
Black				
Pintail				
Mallard				
Shoveller, or Spoon- bill				
Canvasback				
Blue Winged Teal ..				
Green Winged Teal..				
American Golden Eye				
American Widgeon..				
Buffle Headed				
Wood Duck				
Scaup, or Blue Bill..				
Ruddy Duck				
Coween, or Long tailed				
Scoter.....				

NOTE 1.—Place a cross **X** before the name of any bird that breeds in the locality named.

NOTE 2.—Place a square ☐ after the name of any bird that does not breed in the locality named.

NOTE 3.—Place a line — under names of birds of passage, or birds that stay but a short time.

2. Fill in the following Table so far as you can do so from your own knowledge :

Wild birds.	RELATING TO BIRDS BREEDING IN ONTARIO.				RELATING TO MIGRATORY BIRDS.		Remarks.
	Laying time.	No. of eggs.	End of hatching time.	Time when all young are strong on wing.	Arrive.	Depart.	
GROUSE: (<i>Pheasant</i>)							
Ruffed Grouse, or							
Birch Partridge...							
Canada Grouse, or							
Spruce Partridge..							
Pennated Grouse, or							
Prairie Chicken...							
Sharp Tailed Grouse							
QUAIL.....							
TURKEY.....							
WOODCOCK.....							
SNIBE:							
Common, or Wilson's							
Pectoral Sandpiper,							
or Jack Snipe....							
Redbreasted.....							
RAIL:							
Sora, or Carolina....							
King.....							
Virginia.....							
PLOVER:							
Golden.....							
Tell Tale, or Greater							
Yellow Shanks....							
Lesser Yellow Shanks							
Curlew.....							
SWAN:							
Whistling.....							
GEESE:							
Brant.....							
Canada.....							
Snow.....							
DUCKS:							
Gadwall.....							
Redhead.....							
Black.....							
Pintail.....							
Mallard.....							
Shoveller, or Spoon-							
bill.....							
Canvasback.....							
Blue Winged Teal..							
Green Winged Teal.							
American Golden							
Eye.....							
American Widgeon..							
Buffle Headed.....							
Wood Duck.....							
Scaup or Blue Bill..							
Ruddy Duck.....							
Coween, or Long-							
tailed.....							
Scoter.....							

NOTE 1.—Place a cross X before the name of any bird which should not be marketed or sold.

NOTE 2.—Place a square [] after the name of any bird which should not be exported.

NOTE 3.—Place a line — under the name of any bird which should not be imported, except under a high duty.

NOTE 4.—Make remarks on back if there is not room enough in column.

3. If you are opposed to the marketing of any of the foregoing birds, state which and why.

Answer—

4. If opposed to the exportation of any, state which and why.

Answer—

5. If opposed to the unrestricted importation of any, state which and why.

Answer—

6. Should the marketing or sale of game birds be strictly limited to the shooting season?

Answer—

7. What are your reasons for the foregoing reply?

Answer—

8. Should a certain time after the close season begins be allowed to dealers for sale of their stock? If so, how many days?

Answer—

9. Should the killing of wild turkeys be prohibited? If so, for how many years?

Answer—

10. The present close seasons are:

Grouse,	}	January 1st to September 1st.
Pheasant,		
Prairie Fowl,		
Partridge,		
Quail,	}	December 15th to October 15th of the following year.
Wild Turkey,		
Woodcock,		
January 1st to August 15th, same year.		
Snipe,	}	January 1st to September 1st, same year.
Rail,		
Plover,		
Swan,	}	May 1st, to September 1st, same year.
Geese,		
Ducks,	}	January 1st to September 1st, same year.
and all other		
Water Fowl,		

Are these seasons all properly set? If not, what changes do you recommend?

Answer—

11. If you have recommended any changes in close seasons, what are your reasons ?

Answer—

12. Should spring shooting of ducks, geese and swan be forbidden ? If so, why ?

Answer—

13. Should individual sportsmen be restricted to the shooting of a certain number of ducks in any one day ? If so, to how many ?

Answer—

14. Should duck shooting from sail boats and steam yachts be forbidden ? If so, why ?

Answer—

15. With a view of preventing the shooting of some birds in part of their close season, the suggestion that all shooting except quail should begin in September 15th has been made. Do you approve of this ?

Answer—

16. If so, state your reasons.

17. Should foreigners be allowed to shoot game birds in Ontario ?

Answer—

18. If so, should a license fee be exacted from them, and to what sum ?

Answer—

 LIST OF DISTRICTS AND COUNTIES.

From which the 485 witnesses before-named answered the questions on Birds.

Algoma	4	Michigan	3
Bruce	4	Muskoka	47
Cardwell	1	Middlesex	28
Carleton	18	Northumberland	5
Dufferin	1	Nipissing	3
Durham	4	Norfolk	16
Elgin	1	Ontario	7
Essex	12	Oxford	5
Frontenac	10	Prince Edward	3
Grey	3	Peel	1
Haldimand	17	Parry Sound	30
Hastings	31	Peterborough	19
Halton	9	Quebec	1
Haliburton	18	Renfrew	23
Kent	43	Simcoe	27
Lanark	5	Victoria	29
Lennox and Addington	2	Welland	3
Leeds	3	Wellington	11
Lincoln	2	Wentworth	18
Lambton	1	York	17

ANSWERS TO QUESTIONS ON BIRDS BY WITNESSES LIVING IN DISTRICT OF ALGOMA.

1. Not necessary to answer here ; this question was answered by very few witnesses.

2. Not necessary to answer here ; this question was answered by very few witnesses.

3.	No	2
	Blank	2
4.	All	1
	No	1
	Blank	2
5.	No	1
	Blank	3
6.	Yes	4
7.	<i>Reasons obvious as otherwise the law would be broken.</i>	
8.	3 Days	1
	7 Days	1
	14 Days	1
	Blank	1
9.	5 Years	1
	Blank	3
10.	Yes	3

Grouse, Pheasant, Prairie-fowl and Partridge, should not be killed until 15th September

11.	Birds not matured earlier than 15th Sept	2
	Blank	2
12.	Yes	2
	Blank	2
13.	Impossible to prevent	1
	20 per day	1
	Blank	2
14.	Yes	2
	Blank	2
15.	Yes	3
	Blank	1
16.	To prevent extermination of Quail	2
	To allow late birds to mature better	1
	Blank.	1
17.	Yes	4
18.	\$5	2
	Nominal fee	2

ANSWERS TO QUESTIONS ON BIRDS BY WITNESSES LIVING IN COUNTY OF BRUCE.

1. Not necessary to answer here; this question was answered by very few witnesses.

2. Not necessary to answer here; this question was answered by very few witnesses.

3.	Quail	1
	Turkey, woodcock, snipe, plover	1
	All	1
	Grouse	1
4.	All	2
	Blank	2
5.	No	1
	Blank	3
6.	Yes	4
7.	<i>Reasons obvious, as otherwise the law would be broken.</i>	
8.	14 days	1
	10 days	2
	Blank	1
9.	5 Years	1
	4 Years	1
	3 Years	1
	Blank	1
10.	Yes	1
	Ducks 1st May to 1st September	1
	Ducks and Snipe, 8th May to 1st September	1
	Blank	1
11.	Snipe, Duck and Geese should be allowed to be shot in spring, as they are not found here in fall	3
	Blank	1
12.	Yes	1
	No	3
13.	No	3
	Blank	1
14.	No	4
15.	No	4
16.	Blank	4
17.	No	3
	Blank	1
18.	\$20	1
	Blank	3

2. Not necessary to answer here ; this question was answered by very few witnesses.

[illegible]

ANSWERS TO QUESTIONS ON BIRDS, BY WITNESSES LIVING IN COUNTY OF CARLETON.

1. Not necessary to answer here ; this question was answered by very few witnesses.

2. Not necessary to answer here ; this question was answered by very few witnesses.

3.	Yes	-	-	-	-	-	-	-	-	-	8
	No	-	-	-	-	-	-	-	-	-	6
	Blank	-	-	-	-	-	-	-	-	-	4

4.	Yes	-	-	-	-	-	-	-	-	-	14
	All	-	-	-	-	-	-	-	-	-	4

5.	Grouse	-	-	-	-	-	-	-	-	-	1
	All	-	-	-	-	-	-	-	-	-	2
	Blank	-	-	-	-	-	-	-	-	-	15

6.	Yes	-	-	-	-	-	-	-	-	-	18
----	-----	---	---	---	---	---	---	---	---	---	----

7. Reasons obvious, as otherwise the law would be broken.

8.	Yes	-	-	-	-	-	-	-	-	-	4
	7 Days	-	-	-	-	-	-	-	-	-	3
	10 Days	-	-	-	-	-	-	-	-	-	10
	Blank	-	-	-	-	-	-	-	-	-	1

9.	Yes	-	-	-	-	-	-	-	-	-	7
	Blank	-	-	-	-	-	-	-	-	-	9
	5 Years	-	-	-	-	-	-	-	-	-	2

10.	All game birds should be shot 1st September	-	-	2
	Woodcock 1st Jan. to 1st Sept.	-	-	5
	Swan and Geese 15th May to 1st September.	-	-	1
	Ducks 1st Jan. to 10th Aug.	-	-	1
	Yes	-	-	9

11.	Commence all shooting 1st Sept. to prevent shooting out of season	-	-	-	-	-	-	-	-	4
	Blank	-	-	-	-	-	-	-	-	14

12.	Yes	-	-	-	-	-	-	-	-	-	18
-----	-----	---	---	---	---	---	---	---	---	---	----

13.	Yes	-	-	-	-	-	-	-	-	-	15
	50 Ducks	-	-	-	-	-	-	-	-	-	1
	25 Ducks	-	-	-	-	-	-	-	-	-	2

14.	Yes	-	-	-	-	-	-	-	-	-	12
	No	-	-	-	-	-	-	-	-	-	6

1. Not necessary to answer here ; this question was answered by very few witnesses.

3.	Yes	-	-	-	-	-	-	-	-	-	-	1
4.	Blank	-	-	-	-	-	-	-	-	-	-	1

Blank	-	-	.	-	-	-	-	-	.	1
-------	---	---	---	---	---	---	---	---	---	---

6.	Yes	-	-	-	-	.	-	-	-	-	1
----	-----	---	---	---	---	---	---	---	---	---	---

[illegible]

0.	All right	-	-	-	-	.	.	-	-	1
----	-----------	---	---	---	---	---	---	---	---	---

12.	Yes	-	-	-	-	.	-	-	.	'	-	1
-----	-----	---	---	---	---	---	---	---	---	---	---	---

14.	No	-	-	-	-	-	-	-	-	1
-----	----	---	---	---	---	---	---	---	---	---

16. It will prevent much illegal shooting - - - 1

[illegible]

18.	Blank	-	-	.	-	-	-	-	-	-
-----	-------	---	---	---	---	---	---	---	---	---

ANSWERS TO QUESTIONS ON BIRDS, BY WITNESSES LIVING IN COUNTY DURHAM

1. Not necessary to answer here ; this question was answered by very few witnesses.

2. Not necessary to answer here ; this question was answered by very few witnesses.

3.	Yes	-	-	-	-	-	-	-	1
	Blank	-	-	-	-	-	-	-	3
4.	Yes	-	-	-	-	-	-	-	1
	Blank	-	-	-	-	-	-	-	2
	All	-	-	-	-	-	-	-	1
5.	No	-	-	-	-	-	-	-	1
	Blank	-	-	-	-	-	-	-	3
6.	Yes	-	-	-	-	-	-	-	2
	No	-	-	-	-	-	-	-	2
7.	Reasons obvious as otherwise the law would be broken.								
8.	10 Days	-	-	-	-	-	-	-	2
	Blank	-	-	-	-	-	-	-	2
9.	Blank	-	-	-	-	-	-	-	4
10.	Present season good	-	-	-	-	-	-	-	1
	Duck close season should be from Jan. 1st to Aug. 15th	-	-	-	-	-	-	-	1
	Blank	-	-	-	-	-	-	-	2
11.	Ducks are matured by 15th Aug.	-	-	-	-	-	-	-	2
	Blank	-	-	-	-	-	-	-	2
12.	Yes	-	-	-	-	-	-	-	2
	No	-	-	-	-	-	-	-	2
13.	Impossible	-	-	-	-	-	-	-	1
	12 Ducks	-	-	-	-	-	-	-	1
	Blank	-	-	-	-	-	-	-	2
14.	Yes	-	-	-	-	-	-	-	1
	No	-	-	-	-	-	-	-	1
	Blank	-	-	-	-	-	-	-	2
15.	No	-	-	-	-	-	-	-	2
	Blank	-	-	-	-	-	-	-	2
16.	All game fully developed by 1st Sept.	-	-	-	-	-	-	-	1
	No, because no Quail here at that season	-	-	-	-	-	-	-	1
	Blank	-	-	-	-	-	-	-	2
17.	No	-	-	-	-	-	-	-	4
18.	If taxed, \$15 per gun	-	-	-	-	-	-	-	1
	Blank	-	-	-	-	-	-	-	3

ANSWERS TO QUESTIONS ON BIRDS, BY WITNESSES LIVING IN
COUNTY OF ELGIN.

1. Not necessary to answer here ; this question was answered by very few witnesses.

2. Not necessary to answer here ; this question was answered by very few witnesses.

3.	No	-	-	-	-	-	-	-	1
4.	No	-	-	-	-	-	-	-	1
5.	Blank	-	-	-	-	-	-	-	1
6.	No	-	-	-	-	-	-	-	1
7.	Reasons obvious, as otherwise the law would be broken.								
8.	30 days	-	-	-	-	-	-	-	1
9.	Yes	-	-	-	-	-	-	-	1
10.	Blank	-	-	-	-	-	-	-	1
11.	Blank	-	-	-	-	-	-	-	1
12.	Blank	-	-	-	-	-	-	-	1
13.	No	-	-	-	-	-	-	-	1
14.	Blank	-	-	-	-	-	-	-	1
15.	Yes	-	-	-	-	-	-	-	1
16.	Blank	-	-	-	-	-	-	-	1
17.	Yes	-	-	-	-	-	-	-	1
18.	\$1 per week	-	-	-	-	-	-	-	1

ANSWERS TO QUESTIONS ON BIRDS, BY WITNESSES LIVING IN COUNTY OF ESSEX.

1. Not necessary to answer; this question was answered by very few witnesses.

2. Not necessary to answer; this question was answered by very few witnesses.

3.	No	-	-	-	-	-	-	-	1
	Quail and Partridge	-	-	-	-	-	-	-	4
	Grouse	-	-	-	-	-	-	-	1
	Turkey and Woodcock	-	-	-	-	-	-	-	5
	All	-	-	-	-	-	-	-	1
4.	All	-	-	-	-	-	-	-	11
	Blank	-	-	-	-	-	-	-	1
5.	Yes	-	-	-	-	-	-	-	6
	No	-	-	-	-	-	-	-	1
	Blank	-	-	-	-	-	-	-	5
6.	Yes	-	-	-	-	-	-	-	12
	Blank	-	-	-	-	-	-	-	1
7.	Reasons obvious, as otherwise the law would be broken.								
8.	No	-	-	-	-	-	-	-	1
	14 days	-	-	-	-	-	-	-	6
	10 days	-	-	-	-	-	-	-	3
	Blank	-	-	-	-	-	-	-	2
9.	No	-	-	-	-	-	-	-	6
	5 years	-	-	-	-	-	-	-	5
	3 years	-	-	-	-	-	-	-	1
10.	Change Quail season to Nov. 1st to 31st Dec.	-	-	-	-	-	-	-	2
	Allow spring shooting	-	-	-	-	-	-	-	3
	Woodcock and Partridge should be 15th Sept. to 1st Jan.	-	-	-	-	-	-	-	5
	Woodcock season should be Aug. 1st to Jan. 1st	-	-	-	-	-	-	-	1
	Close season for Quail should be 1st Jan. to 1st Oct.	-	-	-	-	-	-	-	1
11.	Birds not matured before Nov. 1st	-	-	-	-	-	-	-	2
	Season for shooting should be more uniform	-	-	-	-	-	-	-	2
	Blank	-	-	-	-	-	-	-	8
12.	Yes	-	-	-	-	-	-	-	6
	No	-	-	-	-	-	-	-	3
	Blank	-	-	-	-	-	-	-	3

13.	No	-	-	-	-	-	-	-	9
	Blank	-	-	-	-	-	-	-	3
14.	Yes	-	-	-	-	-	-	-	9
	No	-	-	-	-	-	-	-	1
	Blank	-	-	-	-	-	-	-	2
15.	Yes	-	-	-	-	-	-	-	11
	No	-	-	-	-	-	-	-	1
16.	Blank	-	-	-	-	-	-	-	12
17.	No	-	-	-	-	-	-	-	2
	Yes	-	-	-	-	-	-	-	7
	Blank	-	-	-	-	-	-	-	3
18.	No	-	-	-	-	-	-	-	6
	\$10	-	-	-	-	-	-	-	1
	Not if they own game preserves	-	-	-	-	-	-	-	1
	Blank	-	-	-	-	-	-	-	4

2. Not necessary to answer ; this question was answered by very few witnesses.

[illegible]

ANSWERS TO QUESTIONS ON BIRDS, BY WITNESSES LIVING IN COUNTY OF GREY.

1. Not necessary to answer ; this question was answered by very few witnesses.

2. Not necessary to answer ; this question was answered by very few witnesses.

3.	All	-	-	-	-	-	-	-	2
	Blank	-	-	-	-	-	-	-	1
4.	Yes	-	-	-	-	-	-	-	2
	Blank	-	-	-	-	-	-	-	1
5.	Yes	-	-	-	-	-	-	-	1
	No	-	-	-	-	-	-	-	1
	Blank	-	-	-	-	-	-	-	1
6.	Yes	-	-	-	-	-	-	-	3
7.	Reasons obvious, as otherwise the law would be broken.								
8.	Yes	-	-	-	-	-	-	-	1
	No	-	-	-	-	-	-	-	1
	Blank	-	-	-	-	-	-	-	1
9.	No	-	-	-	-	-	-	-	1
	5 years	-	-	-	-	-	-	-	1
	Blank	-	-	-	-	-	-	-	1
10.	Close season for water fowl should be 15th April to 1st September								1
	Close season for ducks should be 1st March to 1st September								1
	Present season good								1
11.	Because if spring shooting is not allowed here no ducks can be had								1
	Blank	-	-	-	-	-	-	-	2
12.	Yes	-	-	-	-	-	-	-	2
	Blank	-	-	-	-	-	-	-	1
13.	Yes	-	-	-	-	-	-	-	1
	No	-	-	-	-	-	-	-	2
14.	No	-	-	-	-	-	-	-	3
15.	Yes	-	-	-	-	-	-	-	1
	No	-	-	-	-	-	-	-	1
	1st September	-	-	-	-	-	-	-	1
16.	Blank	-	-	-	-	-	-	-	3
17.	No	-	-	-	-	-	-	-	2
	Yes	-	-	-	-	-	-	-	1
18.	No	-	-	-	-	-	-	-	2
	\$10.	-	-	-	-	-	-	-	1

ANSWERS TO QUESTIONS ON BIRDS, BY WITNESSES LIVING IN COUNTY OF HALDIMAND.

1. Not necessary to answer here; this question was answered by very few witnesses.

2. Not necessary to answer here; this question was answered by very few witnesses.

3.	Blank	-	-	-	-	-	-	2
	All	-	-	-	-	-	-	4
	Yes	-	-	-	-	-	-	6
	No	-	-	-	-	-	-	5
4.	Yes	-	-	-	-	-	-	7
	No	-	-	-	-	-	-	5
	All	-	-	-	-	-	-	5
5.	Yes	-	-	-	-	-	-	11
	All	-	-	-	-	-	-	4
	Blank	-	-	-	-	-	-	2
6.	Yes	-	-	-	-	-	-	16
	Blank	-	-	-	-	-	-	1
7.	Reasons obvious, as otherwise the law would be broken.							
8.	3 days	-	-	-	-	-	-	1
	5 days	-	-	-	-	-	-	14
	7 days	-	-	-	-	-	-	1
	13 days	-	-	-	-	-	-	1
9.	Blank	-	-	-	-	-	-	3
	3 years	-	-	-	-	-	-	1
	5 years	-	-	-	-	-	-	13
10.	Open season for all game should be 15th September to 31st December							
	Yes	-	-	-	-	-	-	1
	Woodcock shooting should commence 1st September	-	-	-	-	-	-	1
	Blank	-	-	-	-	-	-	1
11.	Blank	-	-	-	-	-	-	17
12.	Yes	-	-	-	-	-	-	16
	Blank	-	-	-	-	-	-	1
13.	No	-	-	-	-	-	-	14
	Blank	-	-	-	-	-	-	2
	Duck	-	-	-	-	-	-	1

14.	Yes	-	-	-	-	-	-	-	16
	Blank	-	-	-	-	-	-	-	1
15.	Yes	-	-	-	-	-	-	-	2
	Blank	-	-	-	-	-	-	-	1
	Quail	-	-	-	-	-	-	-	14
16.	Blank	-	-	-	-	-	-	-	17
17.	Yes	-	-	-	-	-	-	-	15
	No	-	-	-	-	-	-	-	2
18.	No	-	-	-	-	-	-	-	1
	\$5	-	-	-	-	-	-	-	12
	\$25	-	-	-	-	-	-	-	1
	Blank	-	-	-	-	-	-	-	3

ANSWERS TO QUESTIONS ON BIRDS, BY WITNESSES LIVING IN
COUNTY OF HASTINGS.

1. Not necessary to answer here ; this question was answered by very few witnesses.

2. Not necessary to answer here ; this question was answered by very few witnesses.

[illegible]

	Ducks should close from 1st January to 1st October.	1
	No. - - - - -	6
	Present season good - - - - -	5
	Blank - - - - -	13
11.	Present season too long - - - - -	1
	On account of scarcity of game birds - - - - -	1
	Blank - - - - -	29
12.	Yes - - - - -	20
	No - - - - -	1
	Blank - - - - -	10
13.	Yes - - - - -	10
	No - - - - -	9
	Blank - - - - -	10
	25 Ducks - - - - -	1
	50 Ducks - - - - -	1
14.	Yes - - - - -	25
	No - - - - -	5
	Blank - - - - -	1
15.	Yes - - - - -	13
	No - - - - -	2
	Blank - - - - -	16
16.	Blank - - - - -	31
17.	Yes - - - - -	8
	No - - - - -	9
	Blank - - - - -	14
18.	\$25. - - - - -	1
	\$20 - - - - -	1
	\$5. - - - - -	2
	\$1. - - - - -	1
	Yes - - - - -	3
	No - - - - -	3
	Blank - - - - -	20

ANSWERS TO QUESTIONS ON BIRDS, BY WITNESSES LIVING IN
COUNTY OF HALTON.

1. Not necessary to answer; this question was answered by very few witnesses.

2. Not necessary to answer; this question was answered by very few witnesses.

[illegible]

ANSWERS TO QUESTIONS ON BIRDS, BY WITNESSES LIVING IN
THE COUNTY OF HALIBURTON.

1. Not necessary to answer ; this question was answered by very few witnesses.

2. Not necessary to answer ; this question was answered by very few witnesses.

[illegible]

ANSWERS TO QUESTIONS ON BIRDS, BY WITNESSES LIVING IN COUNTY OF KENT.

1.	Not necessary to answer here ; this question was answered by very few witnesses.							
2.	Not necessary to answer here ; this question was answered by very few witnesses.							
3.	No	-	-	-	-	-	-	2
	Ducks, Quail and Partridge	-	-	-	-	-	-	37
	All	-	-	-	-	-	-	4
4.	Yes	-	-	-	-	-	-	1
	No	-	-	-	-	-	-	1
	Blank	-	-	-	-	-	-	19
	Quail and Grouse	-	-	-	-	-	-	1
	All	-	-	-	-	-	-	21
5.	Yes	-	-	-	-	-	-	16
	No	-	-	-	-	-	-	18
	Blank	-	-	-	-	-	-	9
6.	Yes	-	-	-	-	-	-	39
	Blank	-	-	-	-	-	-	2
	10 days	-	-	-	-	-	-	1
	16 days	-	-	-	-	-	-	1
7.	Reasons obvious, as otherwise the law would be broken.							
8.	No	-	-	-	-	-	-	9
	Blank	-	-	-	-	-	-	1
	5 days	-	-	-	-	-	-	26
	10 days	-	-	-	-	-	-	7
9.	Yes	-	-	-	-	-	-	11
	No	-	-	-	-	-	-	23
	Blank	-	-	-	-	-	-	2
	5 years	-	-	-	-	-	-	6
	3 years	-	-	-	-	-	-	1
10.	Partridge should be shot 15th Oct. to 1st Jan	-	-	-	-	-	-	1
	Duck should be shot, 20th Sept. to 1st Dec.	-	-	-	-	-	-	1
	Pheasant, Grouse and Quail open season should be 1st Oct. to 1st Jan'y.	-	-	-	-	-	-	1
	Woodcock should be shot Sept. 1st to Jan'y 1st	-	-	-	-	-	-	1
	Snipe, Rail and Plover shooting season should be May 1st to Sept. 1st	-	-	-	-	-	-	1
	Ducks open season should be May 1st to Oct. 15	-	-	-	-	-	-	7
	Blank	-	-	-	-	-	-	31

11.	Ducks do not come here till 25th Oct.	-	-	1
	Woodcock now shot when not full grown	-	-	1
	Quail now killed in Pheasant season	-	-	1
	Blank	-	-	40
12.	Yes	-	-	23
	No	-	-	2
	Blank	-	-	18
13.	Yes	-	-	5
	No	-	-	16
	Blank	-	-	1
	25 Ducks	-	-	3
	50 Ducks	-	-	18
14.	Yes	-	-	43
15.	Yes	-	-	38
	No	-	-	3
	Blank	-	-	2
17.	Yes	-	-	22
	No	-	-	18
	Blank	-	-	3
18.	Blank	-	-	19
	No	-	-	19
	\$10	-	-	2
	\$5	-	-	3

ANSWERS TO QUESTIONS ON BIRDS, BY WITNESSES LIVING IN COUNTY OF LANARK.

1. Not necessary to answer here; this question was answered by very few witnesses.

2. Not necessary to answer here; this question was answered by very few witnesses.

3. Yes - - - - - 3

All - - - - - 1

Ducks, Partridge and Woodcock - - - 1

4. Yes - - - - - 4

All - - - - - 1

5. Yes - - - - - 4

All - - - - - 1

6. Yes - - - - - 3

No - - - - - 1

Blank - - - - - 1

7. Reasons obvious, as otherwise the law would be broken.

8. No - - - - - 1

15 days - - - - - 3

Blank - - - - - 1

9. No - - - - - 1

5 years - - - - - 1

10 years - - - - - 1

Blank - - - - - 2

10. Yes - - - - - 4

Grouse and Partridge close season should be from 15th

Dec. to 15th Sept. - - - - - 1

11. Blank - - - - - 5

12. Yes - - - - - 2

No - - - - - 3

13. No - - - - - 4

50 Ducks - - - - - 1

14. Yes - - - - - 3

No - - - - - 2

15. Yes - - - - - 3

Blank - - - - - 2

16. Blank - - - - - 5

17. No - - - - - 5

18. No - - - - - 2

\$20 - - - - - 2

\$50 - - - - - 1

ANSWERS TO QUESTIONS ON BIRDS, BY WITNESSES LIVING IN
THE COUNTIES OF LENNOX AND ADDINGTON.

1. Not necessary to answer here ; this question was answered by very few witnesses.

2. Not necessary to answer here ; this question was answered by very few witnesses.

3.	No	-	-	-	-	-	-	-	1
	Blank	-	-	-	-	-	-	-	1
4.	No	-	-	-	-	-	-	-	1
	Blank	-	-	-	-	-	-	-	1
5.	No	-	-	-	-	-	-	-	1
	Blank	-	-	-	-	-	-	-	1
6.	No	-	-	-	-	-	-	-	2
7.	Reasons obvious, as otherwise the law would be broken.								
8.	15 days	-	-	-	-	-	-	-	1
	Blank	-	-	-	-	-	-	-	1
9.	No	-	-	-	-	-	-	-	1
	Blank	-	-	-	-	-	-	-	1
10.	Yes	-	-	-	-	-	-	-	2
11.	Blank	-	-	-	-	-	-	-	2
12.	Yes	-	-	-	-	-	-	-	1
	No	-	-	-	-	-	-	-	1
13.	Yes	-	-	-	-	-	-	-	1
	No	-	-	-	-	-	-	-	1
14.	No	-	-	-	-	-	-	-	1
	Blank	-	-	-	-	-	-	-	1
15.	Yes	-	-	-	-	-	-	-	2
16.	Blank	-	-	-	-	-	-	-	2
17.	No	-	-	-	-	-	-	-	1
	Yes	-	-	-	-	-	-	-	1
18.	No	-	-	-	-	-	-	-	1
	Blank	-	-	-	-	-	-	-	1

ANSWERS TO QUESTIONS ON BIRDS, BY WITNESSES LIVING IN
THE COUNTY OF LEEDS.

1. Not necessary to answer here; this question was answered by very few witnesses.

2. Not necessary to answer here; this question was answered by very few witnesses.

[illegible]

ANSWERS TO QUESTIONS ON BIRDS, BY WITNESSES LIVING IN THE COUNTY OF LINCOLN.

1. Not necessary to answer here; this question was answered by very few witnesses.

2. Not necessary to answer here; this question was answered by very few witnesses.

3.	No	-	-	-	-	-	-	-	1
	Grouse, Quail and Woodcock	-	-	-	-	-	-	-	1
4.	No	-	-	-	-	-	-	-	1
	Grouse, Quail and Woodcock	-	-	-	-	-	-	-	1
5.	All	-	-	-	-	-	-	-	1
	Blank	-	-	-	-	-	-	-	1
6.	Yes	-	-	-	-	-	-	-	1
	No	-	-	-	-	-	-	-	1
7.	Reasons obvious, as otherwise the law would be broken.								
8.	2 weeks	-	-	-	-	-	-	-	2
9.	No.	-	-	-	-	-	-	-	2
10.	Woodcock close season should be 1st September to 15th August	-	-	-	-	-	-	-	1
	Quail close season should be 1st October to 15th September	-	-	-	-	-	-	-	1
11.	Blank	-	-	-	-	-	-	-	2
12.	Yes	-	-	-	-	-	-	-	2
13.	No	-	-	-	-	-	-	-	2
14.	No	-	-	-	-	-	-	-	1
	Yes	-	-	-	-	-	-	-	1
15.	Yes	-	-	-	-	-	-	-	2
16.	Blank	-	-	-	-	-	-	-	2
17.	Yes	-	-	-	-	-	-	-	1
	No	-	-	-	-	-	-	-	1
18.	\$25	-	-	-	-	-	-	-	1
	\$5	-	-	-	-	-	-	-	1

- | | | |
|-----|---|---|
| 1. | Not necessary to answer here; this question was answered by very few witnesses. | |
| 2. | Not necessary to answer here; this question was answered by very few witnesses. | |
| 3. | Partridge, Quail, Snipe, Woodcock and Plover | 1 |
| 4. | Yes | 1 |
| 5. | Blank | 1 |
| 6. | Yes | 1 |
| 7. | Reasons obvious, as otherwise the law would be broken. | |
| 8. | 3 days | 1 |
| 9. | 5 years | 1 |
| 10. | Close season for Woodcock 1st January to 1st September. | 1 |
| 11. | Blank | 1 |
| 12. | Yes | 1 |
| 13. | Blank | 1 |
| 14. | No | 1 |
| 14. | Yes | 1 |
| 16. | Blank | 1 |
| 17. | No | 1 |
| 18. | Blank | 1 |

ANSWERS TO QUESTIONS ON BIRDS, BY WITNESSES LIVING IN THE STATE OF MICHIGAN, U. S. A.

1. Not necessary to answer here; this question was answered by very few witnesses.

2. Not necessary to answer here; this question was answered by very few witnesses.

3.	Quail, Turkey, Woodcock and Partridge	-	-	2
	No.	-	-	1
4.	Quail, Turkey, Woodcock and Partridge	-	-	3
5.	Blank	-	-	1
	No	-	-	2
6.	Yes	-	-	2
	50 days' grace	-	-	1
7.	Reasons obvious, as otherwise the law would be broken.			
8.	10 days	-	-	2
	8 days	-	-	1
9.	5 years	-	-	1
	4 years	-	-	2
10.	Close season for Partridge should be January 1st to 15th September	-	-	1
	Close season for Woodcock should be December 1st to 15th August	-	-	1
	Close season for Swan and Geese should be April 15th to 15th September	-	-	1
11.	For game protection	-	-	1
	Blank	-	-	2
12.	Yes	-	-	3
13.	No.	-	-	1
	20 per day	-	-	2
14.	Yes	-	-	3
15.	Yes	-	-	3
17.	Yes	-	-	3
18.	No	-	-	2
	\$50	-	-	1

ANSWERS TO QUESTIONS ON BIRDS, BY WITNESSES LIVING IN
DISTRICT OF MUSKOKA.

1. Not necessary to answer here; this question was answered by very few witnesses.

2. Not necessary to answer here; this question was answered by very few witnesses.

3.	Yes	-	-	-	-	-	-	-	-	-	-	6
	No	-	-	-	-	-	-	-	-	-	-	10
	Blank	-	-	-	-	-	-	-	-	-	-	15
	Quail and Partridge				-	-	-	-	-	-	-	16

[illegible][illegible][illegible]

7. Reasons obvious, as otherwise the law would be broken.

[illegible][illegible]

ANSWERS TO QUESTIONS ON BIRDS, BY WITNESSES LIVING IN COUNTY OF MIDDLESEX.

1. Not necessary to answer here ; this question was answered by very few witnesses.

2. Not necessary to answer here ; this question was answered by very few witnesses.

3.	All	-	-	-	-	-	-	4
	Quail	-	-	-	-	-	-	6
	Quail, Partridge and Woodcock	-	-	-	-	-	-	17
	Partridge	-	-	-	-	-	-	1

4.	All	-	-	-	-	-	-	6
	Blank	-	-	-	-	-	-	16
	Quail, Partridge and Woodcock	-	-	-	-	-	-	6

5.	No	-	-	-	-	-	-	3
	All	-	-	-	-	-	-	19
	Quail	-	-	-	-	-	-	6

6.	Yes	-	-	-	-	-	-	22
	Blank	-	-	-	-	-	-	6

7. Reasons obvious, as otherwise the law would be broken.

8.	5 days	-	-	-	-	-	-	24
	No time	-	-	-	-	-	-	2
	10 days	-	-	-	-	-	-	1
	15 days	-	-	-	-	-	-	1

9.	2 years	-	-	-	-	-	-	6
	3 years	-	-	-	-	-	-	16
	5 years	-	-	-	-	-	-	4
	Blank	-	-	-	-	-	-	2

10.	Quail close season should be 1st Jan. to 1st. Nov.	-	-	-	-	-	-	1
	Woodcock close season should be 1st Jan. to 1st Sept.	-	-	-	-	-	-	1
	Woodcock close season should be 1st January to 1st July	-	-	-	-	-	-	1
	All game should be close from 1st Jan. to 15th Sept	-	-	-	-	-	-	1
	Yes	-	-	-	-	-	-	24

11.	Game too young on 1st Sept.	-	-	-	-	-	-	2
	Woodcock are good in July	-	-	-	-	-	-	1
	Blank	-	-	-	-	-	-	25

12.	Yes	-	-	-	-	-	-	27
	No	-	-	-	-	-	-	1
13.	No	-	-	-	-	-	-	25
	25 ducks	-	-	-	-	-	-	2
	Blank	-	-	-	-	-	-	1
14.	Yes	-	-	-	-	-	-	28
15.	Yes	-	-	-	-	-	-	20
	No	-	-	-	-	-	-	8
16.	Blank	-	-	-	-	-	-	28
17.	Yes	-	-	-	-	-	-	21
	No	-	-	-	-	-	-	7
18.	No	-	-	-	-	-	-	9
	\$10	-	-	-	-	-	-	1
	\$25	-	-	-	-	-	-	15
	High fee	-	-	-	-	-	-	2
	Blank	-	-	-	-	-	-	1

ANSWERS TO QUESTIONS ON BIRDS, BY WITNESSES LIVING IN COUNTY OF NORTHUMBERLAND.

1. Not necessary to answer here; this question was answered by very few witnesses.

2. Not necessary to answer here; this question was answered by very few witnesses.

3.	Yes	-	-	-	-	-	-	-	2
	No	-	-	-	-	-	-	-	3
4.	No	-	-	-	-	-	-	-	3
	Ducks and Partridges	-	-	-	-	-	-	-	2
5.	Yes	-	-	-	-	-	-	-	3
	Blank	-	-	-	-	-	-	-	2
6.	Yes	-	-	-	-	-	-	-	4
	No	-	-	-	-	-	-	-	1
7.	Reasons obvious, otherwise the law would be broken.								
8.	20 days	-	-	-	-	-	-	-	1
	10 days	-	-	-	-	-	-	-	2
	6 days	-	-	-	-	-	-	-	2
9.	5 years	-	-	-	-	-	-	-	1
	Blank	-	-	-	-	-	-	-	4
10.	Yes	-	-	-	-	-	-	-	2
	Blank	-	-	-	-	-	-	-	1
	Geese and Swan should be shot in spring	-	-	-	-	-	-	-	1
	Partridge close should be one month later	-	-	-	-	-	-	-	1
11.	Blank	-	-	-	-	-	-	-	5
12.	Yes	-	-	-	-	-	-	-	3
	No	-	-	-	-	-	-	-	2
13.	Blank	-	-	-	-	-	-	-	3
	No	-	-	-	-	-	-	-	2
14.	Yes	-	-	-	-	-	-	-	4
	Blank	-	-	-	-	-	-	-	1
15.	Yes	-	-	-	-	-	-	-	2
	No	-	-	-	-	-	-	-	1
	Blank	-	-	-	-	-	-	-	2
16.	Blank	-	-	-	-	-	-	-	5
17.	No	-	-	-	-	-	-	-	3
	Yes	-	-	-	-	-	-	-	2
18.	\$1	-	-	-	-	-	-	-	2
	\$5	-	-	-	-	-	-	-	2
	Blank	-	-	-	-	-	-	-	1

ANSWERS TO QUESTIONS ON BIRDS, BY WITNESSES LIVING IN DISTRICT OF NIPISSING.

1. Not necessary to answer here; this question was answered by very few witnesses.

2. Not necessary to answer here; this question was answered by very few witnesses.

3. No - - - - - 2

Blank - - - - - 1

4. Yes - - - - - 2

Blank - - - - - 1

5. No - - - - - 2

Blank - - - - - 1

6. No - - - - - 2

Blank - - - - - 1

7. Reasons obvious, as otherwise the law would be broken.

8. 15 days - - - - - 1

30 days - - - - - 1

Blank - - - - - 1

9. 10 years - - - - - 1

Blank - - - - - 2

10. Yes - - - - - 3

11. Blank - - - - - 3

12. Yes - - - - - 2

No - - - - - 1

13. Yes - - - - - 1

No - - - - - 1

Blank - - - - - 1

14. Yes - - - - - 2

Blank - - - - - 1

15. Yes - - - - - 3

16. Blank - - - - - 3

17. No - - - - - 2

Yes - - - - - 1

18. \$10 - - - - - 2

\$50 - - - - - 1

ANSWERS TO QUESTIONS ON BIRDS, BY WITNESSES LIVING IN THE COUNTY OF NORFOLK.

1. Not necessary to answer here; this question was answered by very few witnesses.

2. Not necessary to answer here; this question was answered by very few witnesses.

3.	Blank	-	-	-	-	-	-	1
	Snipe, Quail, Woodcock and Partridge	-	-	-	-	-	-	13
	All	-	-	-	-	-	-	2
4.	Yes	-	-	-	-	-	-	14
	No	-	-	-	-	-	-	2
5.	Yes	-	-	-	-	-	-	5
	Blank	-	-	-	-	-	-	2
	No	-	-	-	-	-	-	9
6.	Yes	-	-	-	-	-	-	15
	No	-	-	-	-	-	-	1
7.	Reasons obvious, as otherwise the law would be broken.							
8.	No	-	-	-	-	-	-	1
	Blank	-	-	-	-	-	-	1
	3 days	-	-	-	-	-	-	2
	7 days	-	-	-	-	-	-	11
	15 days	-	-	-	-	-	-	1
9.	Yes	-	-	-	-	-	-	5
	No	-	-	-	-	-	-	1
	Blank	-	-	-	-	-	-	3
	5 years	-	-	-	-	-	-	6
	3 years	-	-	-	-	-	-	1
10.	Woodcock and Partridge close season should be 1st							
	January to 15th September	-	-	-	-	-	-	1
	Close all game 1st January to 1st September	-	-	-	-	-	-	1
	Close all game 15th December to 15th September	-	-	-	-	-	-	10
	Woodcock and Partridge close season should be 1st							
	December to 1st September	-	-	-	-	-	-	2
	Woodcock close should be 1st January to 1st September							
		-	-	-	-	-	-	2

11.	Present Law not respected	-	-	-	-	-	-	-	1
	Woodcock not in good condition at present season								2
	Blank	-	-	-	-	-	-	-	13
12.	Yes	-	-	-	-	-	-	-	14
	No	-	-	-	-	-	-	-	2
13.	Yes	-	-	-	-	-	-	-	4
	No	-	-	-	-	-	-	-	10
	200 per season	-	-	-	-	-	-	-	2
14.	Yes	-	-	-	-	-	-	-	15
	No	-	-	-	-	-	-	-	1
15.	Yes	-	-	-	-	-	-	-	13
	15th September to 15th December								3
16.	Blank	-	-	-	-	-	-	-	16
17.	Yes	-	-	-	-	-	-	-	9
	No	-	-	-	-	-	-	-	7
18.	Blank	-	-	-	-	-	-	-	2
	\$5	-	-	-	-	-	-	-	2
	\$20	-	-	-	-	-	-	-	5
	\$25	-	-	-	-	-	-	-	5
	\$50	-	-	-	-	-	-	-	2

ANSWERS TO QUESTIONS ON BIRDS, BY WITNESSES LIVING IN THE COUNTY OF ONTARIO.

1. Not necessary to answer here; this question was answered by very few witnesses.

2. Not necessary to answer here; this question was answered by very few witnesses.

3.	No	-	-	-	-	-	-	-	6
	Partridge	-	-	-	-	-	-	-	1
4.	Yes	-	-	-	-	-	-	-	3
	No	-	-	-	-	-	-	-	4
5.	No	-	-	-	-	-	-	-	7
6.	Yes	-	-	-	-	-	-	-	6
	No	-	-	-	-	-	-	-	1
7.	Reasons obvious, as otherwise the law would be broken.								
8.	No	-	-	-	-	-	-	-	2
	10 days	-	-	-	-	-	-	-	3
	15 days	-	-	-	-	-	-	-	2
9.	Yes	-	-	-	-	-	-	-	3
	5 years	-	-	-	-	-	-	-	3
	Blank	-	-	-	-	-	-	-	1
10.	Allow spring shooting	-	-	-	-	-	-	-	2
	Present season good	-	-	-	-	-	-	-	4
	Partridge season should be one month later	-	-	-	-	-	-	-	1
11.	Game becoming extinct	-	-	-	-	-	-	-	1
	Geese and swan are here a few days only in spring	-	-	-	-	-	-	-	2
	Blank	-	-	-	-	-	-	-	4
12.	Yes	-	-	-	-	-	-	-	2
	No	-	-	-	-	-	-	-	4
	Blank	-	-	-	-	-	-	-	1
13.	No	-	-	-	-	-	-	-	4
	Blank	-	-	-	-	-	-	-	3
14.	Yes	-	-	-	-	-	-	-	3
	No	-	-	-	-	-	-	-	2
	Blank	-	-	-	-	-	-	-	2
15.	Yes	-	-	-	-	-	-	-	6
	No	-	-	-	-	-	-	-	1
16.	Blank	-	-	-	-	-	-	-	7
17.	Yes	-	-	-	-	-	-	-	3
	No	-	-	-	-	-	-	-	4
18.	\$5	-	-	-	-	-	-	-	2
	High fee	-	-	-	-	-	-	-	3
	Blank	-	-	-	-	-	-	-	2

ANSWERS TO QUESTIONS ON BIRDS, BY WITNESSES LIVING IN
THE COUNTY OF OXFORD.

1. Not necessary to answer here; this question was answered by very few witnesses.

2. Not necessary to answer here; this question was answered by very few witnesses.

3.	Yes	-	-	-	-	-	-	-	1
	Blank	-	-	-	-	-	-	-	3
	Quail, Grouse and Partridge	-	-	-	-	-	-	-	1
4.	Yes	-	-	-	-	-	-	-	1
	No	-	-	-	-	-	-	-	4
5.	No	-	-	-	-	-	-	-	2
	Blank	-	-	-	-	-	-	-	3
6.	Yes	-	-	-	-	-	-	-	4
	Blank	-	-	-	-	-	-	-	1
7.	Reasons obvious, as otherwise the law would be broken.								
8.	14 days	-	-	-	-	-	-	-	2
	10 days	-	-	-	-	-	-	-	2
	Blank	-	-	-	-	-	-	-	1
9.	3 years	-	-	-	-	-	-	-	2
	10 years	-	-	-	-	-	-	-	2
	Blank	-	-	-	-	-	-	-	1
10.	Yes	-	-	-	-	-	-	-	1
	Duck season should be extended one month	-	-	-	-	-	-	-	1
	Partridge and Woodcock should be from 1st September to 1st December.	-	-	-	-	-	-	-	2
	Blank	-	-	-	-	-	-	-	1
11.	Woodcock, Partridge and Duck are becoming extinct	-	-	-	-	-	-	-	1
	Blank	-	-	-	-	-	-	-	4
12.	Yes	-	-	-	-	-	-	-	4
	Blank	-	-	-	-	-	-	-	1
13.	Yes	-	-	-	-	-	-	-	2
	No	-	-	-	-	-	-	-	1
	Blank	-	-	-	-	-	-	-	2

ANSWERS TO QUESTIONS ON BIRDS, BY WITNESSES LIVING IN
COUNTY OF PRINCE EDWARD.

1. Not necessary to answer here; this question was answered by very few witnesses.

2. Not necessary to answer here; this question was answered by very few witnesses.

3.	Yes	2
	Blank	1
4.	Yes	2
	Blank	1
5.	No	1
	Blank	2
6.	Yes	2
	Blank	1
7.	Reasons obvious as otherwise the law would be broken.	
8.	No	3
9.	No	3
10.	Woodcock open season should be extended two weeks later	2
	All Waterfowl and Woodcock should begin 1st September.	1
11.	Blank	1
	It would make season uniform	2
12.	Yes	3
13.	Yes	2
	No	1
14.	Yes	3
15.	Yes	2
	No	1
16.	Blank	3
17.	Blank	1
	No	2
18.	\$25	1
	Blank	2

ANSWERS TO QUESTIONS ON BIRDS, BY WITNESSES LIVING IN
THE COUNTY OF PEEL.

1. Not necessary to answer here ; this question was answered by very few witnesses.
 2. Not necessary to answer here ; this question was answered by very few witnesses.
 3. Quail, Grouse and Woodcock 1
 4. All 1
 5. All 1
 6. No 1
 7. Reasons obvious, as otherwise the law would be broken. 1
 8. No 1
 9. 5 years 1
 10. Extend open season for Woodcock to 1st September 1
 11. Blank 1
 12. Yes 1
 13. 50 Ducks per season 1
 14. Yes 1
 15. Yes 1
 16. Blank 1
 17. No 1
 18. No 1
-

ANSWERS TO QUESTIONS ON BIRDS, BY WITNESSES LIVING IN THE DISTRICT OF PARRY SOUND.

1. Not necessary to answer here; this question was answered by very few witnesses.

2. Not necessary to answer here; this question was answered by very few witnesses.

3.	Yes	23
	No	4
	Blank	3
4.	Yes	25
	No	2
	Blank	2
	All	1
5.	Yes	10
	No	17
	Blank	3
6.	Yes	22
	No	5
	Blank	3
7.	Reasons obvious, as otherwise the law would be broken.	
8.	No	1
	7 days	14
	10 days	7
	15 days	2
	30 days	4
	Blank	2
9.	Yes.	4
	No	2
	Blank	20
	10 years	4
10.	Present season good	7
	Make seasons uniform	11
	Partridge and Duck close season should be from January	
	1st to 15th September	1
	Blank	11
11.	Have one common shooting season, and save young	
	birds	12
	Blank	18

ANSWERS TO QUESTIONS ON BIRDS, BY WITNESSES LIVING IN THE COUNTY OF PETERBOROUGH.

1. Not necessary to answer here; this question was answered by very few witnesses.

2. Not necessary to answer here; this question was answered by very few witnesses.

3.	Partridge	17
	Ducks	2
4.	Yes	14
	Blank	3
	All	2
5.	Yes	4
	No	13
	Blank	2
6.	Yes	19
7.	Reasons obvious, as otherwise the law would be broken.	
8.	Yes	1
	Blank	4
	15 days	4
	10 days	1
	7 days	1
	3 days	3
	2 days	1
	2 weeks	4
9.	Blank	19
10.	Yes	4
	Duck close season should be from 15th August to 15th September	10
	Grouse and Partridge season should be 15 days earlier.	5
11.	Blank	19
12.	Yes	11
	No	5
	Blank	2
	7 days	1
13.	Yes	15
	Blank	2
	25 Ducks	1
	15 Ducks	1

14.	Yes	.	.	.	.	.	.	.	18
	No	.	.	.	.	.	.	.	1
15.	Yes	.	.	.	.	.	.	.	1
	No	.	.	.	.	.	.	.	16
	Blank	.	.	.	.	.	.	.	2
16.	Blank	.	.	.	.	.	.	.	19
17.	Yes	.	.	.	.	.	.	.	11
	No	.	.	.	.	.	.	.	8
18.	\$3	.	.	.	.	.	.	.	10
	\$20	.	.	.	.	.	.	.	1
	\$25	.	.	.	.	.	.	.	1
	Blank	.	.	.	.	.	.	.	7

ANSWERS TO QUESTIONS ON BIRDS, BY WITNESSES LIVING IN
THE PROVINCE OF QUEBEC.

1. Not necessary to answer here; this question was answered by very few witnesses.

2. Not necessary to answer here; this question was answered by very few witnesses.

3.	Blank	1
4.	No	1
5.	Blank	1
6.	Blank	1
7.	Reasons obvious, as otherwise the law would be broken.	
8.	Blank	1
9.	Blank	1
10.	Quail close should be December 15th to October 31st.	1
11.	Blank	1
12.	Blank	1
13.	No	1
14.	No	1
15.	Yes	1
16.	Blank	1
17.	Blank	1
18.	Blank	1

ANSWERS TO QUESTIONS ON BIRDS, BY WITNESSES LIVING IN
COUNTY OF RENFREW.

1. Not necessary to answer here; this question was answered by very few witnesses.

2. Not necessary to answer here; this question was answered by very few witnesses.

3.	No	1
	Blank	7
	Partridge	15
4.	Yes	8
	No	1
	Blank	8
	Partridge	2
	All	4
5.	No	3
	Blank	20
6.	Yes	19
	No	2
	Blank	2
7.	Reasons obvious, as otherwise the law would be broken.	
8.	No	8
	Blank	3
	15 days	5
	1 week	3
	10 days	4
9.	No	1
	Blank	21
	5 years	1
10.	Blank	5
	Yes	17
	Allow game to be shot at all seasons	22
11.	Blank	23
12.	Blank	4
	Yes	15
	No	4
13.	Yes	14
	Blank	3
	No	5
	25 Ducks	1

ANSWERS TO QUESTIONS ON BIRDS, BY WITNESSES LIVING IN COUNTY OF SIMCOE.

1. Not necessary to answer here ; this question was answered by very few witnesses.

2. Not necessary to answer here ; this question was answered by very few witnesses.

3. Yes - - - - - 2

No - - - - - 8

Blank - - - - - 12

Quail and Woodcock - - - - - 1

Quail, Turkey and Partridge, - - - - - 2

All - - - - - 1

Grouse - - - - - 1

4. Yes - - - - - 2

No - - - - - 3

Blank - - - - - 19

All - - - - - 3

5. Yes - - - - - 1

No - - - - - 3

Blank - - - - - 21

Quail and Turkey - - - - - 1

All - - - - - 1

6. Yes - - - - - 14

No - - - - - 6

Blank - - - - - 7

7. Reasons obvious, as otherwise the law would be broken.

8. Yes - - - - - 4

No - - - - - 2

Blank - - - - - 6

5 days - - - - - 2

10 days - - - - - 8

14 days - - - - - 1

15 days - - - - - 4

9. Yes - - - - - 1

Blank - - - - - 18

5 years - - - - - 8

10. Present season good - - - - - 8

Blank - - - - - 8

Allow spring Duck shooting - - - - - 2

	Woodcock close season should be from 1st January to 1st September - - - - -	1
	Grouse and Partridge, should be from 1st December to 1st October - - - - -	1
	Prohibit Quail and Turkey shooting, 3 years - - - - -	1
	Close Partridge shooting on 25th December - - - - -	1
	Woodcock should not be shot in September - - - - -	2
	Extend Partridge season to 1st December - - - - -	1
	Make Partridge close season from February 1st to October 1st - - - - -	1
	Make close for Snipe, Rail and Plover, February 1st to October 1st - - - - -	1
11.	Blank - - - - -	23
	Partridge shot too young - - - - -	2
	Partridge will soon be exterminated under present law	1
	Few Ducks breed here - - - - -	1
12.	Yes - - - - -	8
	No - - - - -	10
	Blank - - - - -	9
13.	Yes - - - - -	3
	No - - - - -	12
	Blank - - - - -	7
	10 Ducks - - - - -	4
	20 Ducks - - - - -	1
14.	Yes - - - - -	8
	No - - - - -	8
	Blank - - - - -	11
15.	Yes - - - - -	12
	No - - - - -	5
	Blank - - - - -	10
16.	Blank - - - - -	27
17.	No - - - - -	15
	Yes - - - - -	8
	Blank - - - - -	4
18.	\$50 - - - - -	1
	\$25 - - - - -	2
	\$20 - - - - -	3
	\$15 - - - - -	1
	\$10 - - - - -	2
	\$5 - - - - -	1
	\$2 - - - - -	3
	\$1 - - - - -	1
	Blank - - - - -	7
	No - - - - -	3
	Small fee - - - - -	3

ANSWERS TO QUESTIONS ON BIRDS, BY WITNESSES LIVING IN COUNTY OF VICTORIA.

1.	Not necessary to answer here; this question was answered by very few witnesses.	
2.	Not necessary to answer here; this question was answered by very few witnesses.	
3.	No - - - - -	12
	Partridge - - - - -	2
	Blank - - - - -	15
4.	Yes - - - - -	1
	No - - - - -	11
	Partridge - - - - -	3
	Blank - - - - -	14
5.	Yes - - - - -	16
	No - - - - -	13
6.	Yes - - - - -	20
	No - - - - -	1
	Blank - - - - -	8
7.	Reasons obvious, as otherwise the law would be broken.	
8.	Yes - - - - -	3
	No - - - - -	4
	6 days - - - - -	11
	10 days - - - - -	4
	15 days - - - - -	4
	Blank - - - - -	3
9.	No - - - - -	1
	5 years - - - - -	6
	Blank - - - - -	22
10.	Make Duck season open 15th August - - - - -	2
	Prohibit all spring shooting - - - - -	1
	Open Woodcock, Duck and Partridge season 1st August	3
	Yes - - - - -	19
	Blank - - - - -	4
11.	Present season opens too late - - - - -	11
	Birds not matured by 15th August - - - - -	3
	Blank - - - - -	15

12.	Yes	-	-	-	-	-	-	24
	No	-	-	-	-	-	-	3
	Blank	-	-	-	-	-	-	2
13.	Yes	-	-	-	-	-	-	3
	No	-	-	-	-	-	-	8
	6 Ducks	-	-	-	-	-	-	1
	10 Ducks	-	-	-	-	-	-	2
	25 Ducks	-	-	-	-	-	-	3
	50 Ducks	-	-	-	-	-	-	11
	Blank	-	-	-	-	-	-	1
14.	Yes	-	-	-	-	-	-	7
	No	-	-	-	-	-	-	17
	Blank	-	-	-	-	-	-	5
15.	Yes	-	-	-	-	-	-	7
	No	-	-	-	-	-	-	17
	Blank	-	-	-	-	-	-	5
16.	Blank	-	-	-	-	-	-	29
17.	Yes	-	-	-	-	-	-	19
	No	-	-	-	-	-	-	9
	Blank	-	-	-	-	-	-	1
18.	Yes	-	-	-	-	-	-	4
	No	-	-	-	-	-	-	1
	\$1	-	-	-	-	-	-	1
	\$5	-	-	-	-	-	-	3
	\$10	-	-	-	-	-	-	11
	\$25	-	-	-	-	-	-	2
	\$50	-	-	-	-	-	-	1
	Blank	-	-	-	-	-	-	6

ANSWERS TO QUESTIONS ON BIRDS, BY WITNESSES LIVING IN
COUNTY OF WELLAND.

1. Not necessary to answer here ; this question was answered by very few witnesses.

2. Not necessary to answer here ; this question was answered by very few witnesses.

3.	Woodcock, Partridge and Quail	-	-	-	-	-	-	1
	Blank	-	-	-	-	-	-	2
4.	All	-	-	-	-	-	-	1
	Blank	-	-	-	-	-	-	2
5.	Quail and Prairie Chicken	-	-	-	-	-	-	1
	Blank	-	-	-	-	-	-	2
6.	Yes	-	-	-	-	-	-	3
7.	Reasons obvious, as otherwise the law would be broken.							
8.	10 days	-	-	-	-	-	-	2
	15 days	-	-	-	-	-	-	1
9.	5 years	-	-	-	-	-	-	2
	10 years	-	-	-	-	-	-	1
10.	Snipe close should be 15th April to 1st May	-	-	-	-	-	-	1
	Yes	-	-	-	-	-	-	2
11.	Blank	-	-	-	-	-	-	3
12.	Yes	-	-	-	-	-	-	3
13.	Yes	-	-	-	-	-	-	1
	20 Ducks	-	-	-	-	-	-	2
14.	Yes	-	-	-	-	-	-	2
	Blank	-	-	-	-	-	-	1
15.	Yes	-	-	-	-	-	-	1
	No	-	-	-	-	-	-	1
	Blank	-	-	-	-	-	-	1
16.	Blank	-	-	-	-	-	-	3
17.	Yes	-	-	-	-	-	-	1
	Blank	-	-	-	-	-	-	2
18.	\$5	-	-	-	-	-	-	1
	\$25	-	-	-	-	-	-	1
	Blank	-	-	-	-	-	-	1

ANSWERS TO QUESTIONS ON BIRDS, BY WITNESSES LIVING IN COUNTY OF WELLINGTON.

1. Not necessary to answer here; this question was answered by very few witnesses.

2. Not necessary to answer here; this question was answered by very few witnesses.

3.	Yes	-	-	-	-	-	-	-	2
	No	-	-	-	-	-	-	-	3
	Blank	-	-	-	-	-	-	-	2
	All	-	-	-	-	-	-	-	1
	Woodcock	-	-	-	-	-	-	-	2
	Ducks	-	-	-	-	-	-	-	1

4.	No	-	-	-	-	-	-	-	4
	Blank	-	-	-	-	-	-	-	3
	All	-	-	-	-	-	-	-	4

5.	No	-	-	-	-	-	-	-	7
	Blank	-	-	-	-	-	-	-	4

6.	Yes	-	-	-	-	-	-	-	10
	No	-	-	-	-	-	-	-	1

7. Reasons obvious, as otherwise the law would be broken.

8.	Yes	-	-	-	-	-	-	-	1
	No	-	-	-	-	-	-	-	4
	Blank	-	-	-	-	-	-	-	1
	10 days	-	-	-	-	-	-	-	3

9.	Yes	-	-	-	-	-	-	-	2
	No	-	-	-	-	-	-	-	4
	Blank	-	-	-	-	-	-	-	2
	7 years	-	-	-	-	-	-	-	1
	5 years	-	-	-	-	-	-	-	2

10.	Blank	-	-	-	-	-	-	-	5
	Partridge open season should commence 1st Oct.	-	-	-	-	-	-	-	1
	Woodcock close season should be extended 1st Sept.	-	-	-	-	-	-	-	2
	All game should be close from 15th Sept. to 1st Oct.	-	-	-	-	-	-	-	2
	Yes	-	-	-	-	-	-	-	1

11.	Blank	-	-	-	-	-	-	-	7
	Many grouse are shot out of season	-	-	-	-	-	-	-	2
	Season should be uniform	-	-	-	-	-	-	-	2

12.	Yes	-	-	-	-	-	-	5
	No	-	-	-	-	-	-	4
	Blank	-	-	-	-	-	-	2
13.	No	-	-	-	-	-	-	7
	Blank	-	-	-	-	-	-	3
	25 Ducks	-	-	-	-	-	-	1
14.	Yes	-	-	-	-	-	-	4
	No	-	-	-	-	-	-	4
	Blank	-	-	-	-	-	-	3
15.	Yes	-	-	-	-	-	-	5
	No	-	-	-	-	-	-	4
	Blank	-	-	-	-	-	-	2
16.	Blank	-	-	-	-	-	-	11
17.	No	-	-	-	-	-	-	5
	Yes	-	-	-	-	-	-	5
	Blank	-	-	-	-	-	-	1
18.	Blank	-	-	-	-	-	-	6
	\$10	-	-	-	-	-	-	2
	\$20	-	-	-	-	-	-	3

ANSWERS TO QUESTIONS ON BIRDS, BY WITNESSES LIVING IN
THE COUNTY OF WENTWORTH.

1.	Not necessary to answer here; this question was answered by very few witnesses.	
2.	Not necessary to answer here; this question was answered by very few witnesses.	
3.	No - - - - -	5
	Quail, Woodcock and Partridge - - - - -	13
4.	No - - - - -	3
	All - - - - -	15
5.	Yes - - - - -	1
	No - - - - -	10
	All - - - - -	2
	Blank - - - - -	5
6.	Yes - - - - -	14
	No - - - - -	4
7.	Reasons obvious, as otherwise the law would be broken.	
8.	5 days - - - - -	15
	10 days - - - - -	3
9.	Yes - - - - -	9
	5 years - - - - -	5
	Blank - - - - -	4
10.	Close for Quail should be from 15th Dec. to 1st Sept.	5
	Close for Woodcock should be 15th Jan'y to 1st Sept.	3
	Close for Quail should be from 15th Dec. to 1st Nov. -	9
	Blank - - - - -	1
11.	Birds are now killed out of season - - - - -	4
	Blank - - - - -	14
12.	Yes - - - - -	13
	No - - - - -	5
13.	Yes - - - - -	3
	No - - - - -	15
14.	Yes - - - - -	18
15.	Yes - - - - -	16
	Blank - - - - -	2
16.	Blank - - - - -	18
17.	Yes - - - - -	14
	No - - - - -	4
18.	\$5 - - - - -	1
	\$10 - - - - -	1
	\$25 - - - - -	14
	\$50 - - - - -	1
	\$100 - - - - -	1

ANSWERS TO QUESTIONS ON BIRDS, BY WITNESSES LIVING IN COUNTY OF YORK.

1. Not necessary to answer here ; this question was answered by very few witnesses.

2. Not necessary to answer here ; this question was answered by very few witnesses.

3.	No	-	-	-	-	-	-	-	2
	Quail and Partridge	-	-	-	-	-	-	-	7
	Woodcock	-	-	-	-	-	-	-	3
	Ducks	-	-	-	-	-	-	-	3
	Blank	-	-	-	-	-	-	-	2
4.	No	-	-	-	-	-	-	-	2
	Partridge	-	-	-	-	-	-	-	4
	Quail and Ducks	-	-	-	-	-	-	-	3
	All	-	-	-	-	-	-	-	8
5.	Yes	-	-	-	-	-	-	-	3
	No	-	-	-	-	-	-	-	4
	Blank	-	-	-	-	-	-	-	10
6.	Yes	-	-	-	-	-	-	-	14
	No	-	-	-	-	-	-	-	3
7.	Reasons obvious, as otherwise the law would be broken.								
8.	7 days	-	-	-	-	-	-	-	10
	10 days	-	-	-	-	-	-	-	5
	15 days	-	-	-	-	-	-	-	1
	20 days	-	-	-	-	-	-	-	1
9.	No	-	-	-	-	-	-	-	1
	3 years	-	-	-	-	-	-	-	7
	5 years	-	-	-	-	-	-	-	7
	10 years	-	-	-	-	-	-	-	2
10.	Partridge close season should be 1st Dec. to 1st Sept.	-	-	-	-	-	-	-	3
	Quail and Turkey close season should be 1st Dec. to 1st Sept.	-	-	-	-	-	-	-	1
	Woodcock, Quail and Partridge should be 1st Jan'y to 15th Oct.	-	-	-	-	-	-	-	6
	All shooting should commence 15th Sept.	-	-	-	-	-	-	-	1
	Yes	-	-	-	-	-	-	-	5
	Blank	-	-	-	-	-	-	-	1

11.	In order to protect game birds generally	-							4
	Birds too young	-	-	-	-	-	-	-	2
	Blank	-	-	-	-	-	-	-	11
12.	Yes	-	-	-	-	-	-	-	9
	No	-	-	-	-	-	-	-	4
	Blank	-	-	-	-	-	-	-	4
13.	Yes	-	-	-	-	-	-	-	4
	No	-	-	-	-	-	-	-	9
	Blank	-	-	-	-	-	-	-	4
14.	Yes	-	-	-	-	-	-	-	12
	No	-	-	-	-	-	-	-	2
	Blank	-	-	-	-	-	-	-	3
15.	Yes	-	-	-	-	-	-	-	13
	No	-	-	-	-	-	-	-	4
16.	Blank	-	-	-	-	-	-	-	17
17.	Yes	-	-	-	-	-	-	-	5
	No	-	-	-	-	-	-	-	9
	Blank	-	-	-	-	-	-	-	3
18.	No	-	-	-	-	-	-	-	1
	\$1 to members of Gun Clubs	-	-	-	-	-	-	-	1
	\$5	-	-	-	-	-	-	-	1
	\$20	-	-	-	-	-	-	-	1
	\$25	-	-	-	-	-	-	-	3
	\$50	-	-	-	-	-	-	-	1
	\$100	-	-	-	-	-	-	-	1
	Blank	-	-	-	-	-	-	-	8

QUESTIONS RELATING TO FISH.

The questions prepared on this subject by your Commissionners were answered by 497 persons as follows:—

NAME.	OCCUPATION.	ADDRESS.	COUNTY.
Jno. Forde	Fur Dealer	Schrieber	Algoma.
John Piche	Wood-ranger	Sudbury	"
Thos. Penfold	Jailor	Port Arthur	"
Thos. Frood	Farmer	Little Current	"
A. W. Hodgson	Train Despatcher	Fort William	"
J. H. Garner	Physician	Lucknow	Bruce.
Geo. Mair	Banker	"	"
H. M. Smith	Saw-miller	Southampton	"
Cecil Swale	Farmer	Wiarton	"
W. J. Topley	Photographer	Ottawa	Carleton.
W. W. Boucher	Veterinary Surgeon	South March	"
Geo. C. Wood	P. O. Department	Ottawa	"
F. G. Vanderlip	Hotel keeper	"	"
J. B. Spence	"	"	"
W. P. Lett	City Clerk	"	"
John T. G. Whyte	Lumberman's Agent	"	"
John Stewart	Pro. Land Surveyor	"	"
P. A. McDougal	Physician	"	"
A. H. Johnson	Farmer	Castleford	"
F. H. F. Mercer	Clerk	Ottawa	"
T. G. Carpenter	Agent	Arnprior	"
W. R. McEwan	Government Survey Dep't.	Ottawa	"
H. D. Lane	Militia Department	"	"
Louis J. Coursolles	Patent Agent	"	"
W. P. Batterton	Book-keeper	"	"
Wm. O'Leary	Farmer	Loretto	Cardwell.
H. H. Burnham	Gentleman	Port Hope	Durham.
W. Fry	"	Fraserville	"
G. M. Furby	Manager	Port Hope	"
Job Dickinson	Farmer	Zion	"
R. Dinner	"	"	"
Chas. Wilmot	Supt. Fish Hatchery	Newcastle	"
J. C. Fox	Pres. Orangeville Gun Club	Orangeville	Dufferin.
A. White	Lumberman	Orwell	Elgin.
Chas. Eastlake	Merchant	"	"
H. J. O'Lone	"	"	"
C. W. Gautier	Fisherman	Windsor	Essex.
Victor Allore	"	Colchester	"
Geo. A. Goodman	Builder	Windsor	"
Dan. G. Revell	Conductor	"	"
Wm. Donaldson	Painter	"	"
C. L. Paré	Manufacturer	"	"
R. Vigneaux	Carpenter	"	"
A. Drouillard	Customs Officer	"	"
Geo. Cheyne	Sec'y. Keystone Gun Club	"	"
J. H. Brickwood	Rod and Fly maker	Kingston	Frontenac.
John G. Gordon	Farmer	Parham	"
Robt. Clow	"	"	"
Wm. A. Wagar	"	"	"
E. S. Rogers	Veterinary Surgeon	Meaford	Grey.
John Greene	Guide	Dunnville	Haldimand.
S. A. Beck	Farmer	South Cayuga	"
S. W. Hornbrook	"	Dunnville	"
John Crawford	Fisherman	"	"
Fred. Lowe	Gentleman	"	"
Martin Green	Fisherman	"	"
Jno. Green	"	"	"
Wm. McIndoe	"	"	"
Freeman Green	"	"	"
J. C. Eccles	Barrister	"	"
Isaac Wismer	"	South Cayuga	"
W. G. Wismer	"	"	"
Chas. Ross	"	Dunnville	"

QUESTIONS RELATING TO FISH.—*Continued.*

NAME.	OCCUPATION.	ADDRESS.	COUNTY.
Wm. Lambier		Dunniyle	Haldimand.
Lewis Fox		"	"
Henry Fox		"	"
J. Farrell		Cayuga	
Gilbert Holmes	Farmer	St. Ola	Hastings.
Thos. Moore	"	"	"
B. Sine	"	Harold	"
W. Turner	"	Faraday	"
C. I. Barager	"	Sine	"
S. Badgley		Sterling	"
R. C. Fair	Merchant	Bancroft	"
Jos. Stoneberg	Policeman	Belleville	"
Thos. Nugent	Farmer	Nugent	"
John Campbell	"	Haverzal	"
Geo. Patison	"	Coe Hill Mines	"
J. W. Hain	"	St. Ola	"
Henry Bird	"	The Ridge	"
F. A. Bird	Carpenter	Stirling	"
J. C. George	Postmaster	Bancroft	"
Wm. S. Clarke	Farmer	Holloway	"
E. B. Fralick	Judge	Belleville	"
E. N. Leavens	"	"	"
Fred. Root	"	"	"
J. N. Pringle	"	"	"
J. W. Loudon	"	"	"
Geo. Twining	"	"	"
R. S. Tivy	Merchant	Coe Hill Mines	"
Peter Wright	Farmer	St. Ola	"
Henry Foster	"	Faraday	"
Ed. Johnson	Bush-ranger	Bancroft	"
Fred. B. Lacey	Farmer	Beechmount	"
Henry Denninson	"	Purdy	"
A. G. Allison	Train Despatcher	Belleville	"
P. P. Clarke	Merchant	St. Ola	"
John McAllister	Farmer	Bird's Creek	"
Wm. H. Sweet	"	Bancroft	"
Fred. Mullett	Hotel-keeper	Bancroft	"
W. J. Austin	Merchant	Haliburton	Haliburton.
C. S. Austin	Gentleman	"	"
Geo. Bemmister	Civil Engineer	"	"
Jas. Morley	Cabinet-maker	"	"
John Reid	Carpenter	"	"
J. Lucas	Hotel-keeper	"	"
E. Leith	Merchant	"	"
P. O'Connor	Trapper	"	"
C. R. Stewart	Gentleman	"	"
Jos. Paul	Butcher	"	"
Jos. Kellett	Hotel-keeper	"	"
S. Dawson	Farmer	"	"
F. Freeman	Merchant	"	"
L. M. Neily	Shoemaker	"	"
E. W. Lockman	Guide	Dorset	"
R. Davis	Shoemaker	Minden	"
Thos. Scott	Farmer	Kennaway	"
A. McCall	"	Gooderham	"
Walter Parish	Farmer	"	"
Chas. May	Postmaster	Gooderham	"
J. Sedgwick	Farmer	Gelert	"
Geo. Gregory	"	Wicksteed	"
Geo. Tutt	Guide	Dorset	"
Caleb Lonsley	Farmer	Trafalgar	Halton.
John Boyes	"	Nelson	"
T. J. Wheeler	"	Georgetown	"
Thos. Ireland	"	Nelson	"
J. Wilson	"	Ash	"
A. Clements	"	Trafalgar	"
Wm. Panton	Editor	Milton	"
T. P. Warner	Farmer	Guilds	Kent.

QUESTIONS RELATING TO FISH.—Continued.

NAME.	OCCUPATION.	ADDRESS.	COUNTY.
Wm. Mallory	Farmer	Guilds	Kent.
J. A. McKellar		Ridgetown	"
H. A. Mallory		"	"
M. Massey	Farmer	Chatham	"
Jas. Kime	Veterinary Surgeon	"	"
C. Wheeler	Merchant	"	"
D. Smith	Farmer	"	"
A. Williams	"	Raleigh	"
Jas. Rankin	"	Dover	"
A. Alexander, jr.	"	Dover	"
T. H. Nelson	Bailiff	Chatham	"
Jas. Hamilton	Fisherman	Jeannette Creek	"
John Houston	Farmer	Harwich	"
H. Dagneau	Merchant	Chatham	"
H. A. Crow	Farmer	Raleigh	"
W. A. Campbell	Clerk	Chatham	"
J. B. Reynolds	Merchant	Rond Eau	"
D. R. Watson	Caretaker	Morpeth	"
P. D. Bates	Fisherman	Ridgetown	"
W. B. Wells	Clerk	Chatham	"
John Mercer	Sheriff	"	"
Gordon Boles	Captain	"	"
J. L. Nicholls	Dentist	"	"
Jas. Thomas	Farmer	Raleigh	"
Wm. Crow	"	Dover	"
S. Holmes	Merchant	Chatham	"
A. Wilcox	Farmer	Dover	"
G. A. Laver	Law Student	Chatham	"
David Wilson	Farmer	Harwich	"
Jas. McGarvin	"	"	"
P. McGarvin	"	Dover	"
Alex. Ducedre	"	"	"
Geo. Kime	"	"	"
A. Alexander, sr.	"	"	"
J. B. Gillard	"	Wallaceburg	"
W. L. Cameron	"	Harwich	"
Chas. D. Shirley	Fisherman	Blenheim	"
John K. Thompson	"	Rockport	Leeds.
Wm. Wilson	"	"	"
H. T. Fitzsimmons	"	"	"
W. G. Parish	Banker	Athens	"
A. Senecal	Oarsman	Pools Resort	"
J. B. Saunders	Mill Owner	Athens	"
Wm. Fyfe	Carriage-maker	Westport	"
Ed. Senecal	Oarsman	Rockport	"
Jas. Fitzpatrick	Mechanic	Brockville	"
R. Gile	Farmer	Smith's Fall	"
J. B. Smith	Oarsman	Charleston	"
J. K. Thomson	Farmer	Rockport	"
Jos. Deacon	Magistrate	Brockville	"
D. S. Booth	Contractor	"	"
A. F. Stagg	Butcher	"	"
Geo. Bucher	"	"	"
A. Armstrong	Hotel-keeper	Charleston Lake	"
Jas. C. Huffman	Druggist	Napanee	Lennox & Addington.
— Sills	Farmer	"	"
F. Van De Bogart	Ranchman	"	"
N. J. Dawson	Barrister	Petrolia	Lambton.
Jas. Paton	Gentleman	Beamsville	Lincoln.
John Hammond	Hotel-keeper	Welland	"
Jas. C. Armstrong	Dentist	Almonte	Lanark.
G. H. Gilbert	Hair Dresser	"	"
Neil McDonald	Teacher	Carleton Place	"
Duncan Campbell	Tailor	Almonte	"
Isaac Korry	Sawmiller	Maberly	"
A. Hunt	Banker	Bracebridge	Muskoka.
Jas. Boyer	Clerk	"	"
J. C. Davidson	"	"	"

QUESTIONS RELATING TO FISH.—*Continued.*

NAME.	OCCUPATION.	ADDRESS.	COUNTY.
Jos. Ripkie	Stonemason	Bracebridge	Muskoka.
Singleton Brown	Shinglemiller	"	"
F. Pokorney	Trapper	Huntsville	"
E. Hanes	Postmaster	Utterson	"
Jos. Clarke	Merchant	Aspdin	"
Thos. Burgers	Sawmiller	Bala	"
Wm. J. Terry	Settler	Vankoughnet	"
A. Monteith	Hunter	Rosseau	"
John Telfer	Farmer	Giska	"
H. Demara	"	Baysville	"
W. J. Miller	"	Vankoughnet	"
B. S. Beley	"	Rosseau	"
J. VanKoughnet	"	Falding	"
H. VanKoughnet	"	"	"
John Monteith	Hotel Proprietor	Rosseau	"
Geo. Terry	Farmer	Brackenrig	"
D. E. Hough	"	Port Carling	"
C. Sawyer	Guide	Dorset	"
Thomas Currie	"	Bala	"
H. Austin	"	Bardsville	"
H. King	Butcher	Gravenhurst	"
Samuel Green	Farmer	Bala	"
J. Green	"	"	"
E. J. Gouldie	"	Dwight	"
Richard Clarke	"	Port Sidney	"
Wm. McBrien	"	Antioch	"
F. Kent	Veterinary Surgeon	Bracebridge	"
Donald Gordon	Farmer	Magnetawan	"
Joseph Wallis	Merchant	Port Carling	"
C. O. G. Stewart	Farmer	Brackenrig	"
John May	"	Port Carling	"
Jas. Fowler	"	Seely	"
John Board	Hotel-keeper	Bala	"
I. Goble	Farmer	Sandfield	"
Jas. Clark	"	Monsell	"
W. H. Green	Hunter	Grassmere	"
T. E. I. Salmon	Farmer	Dwight	"
C. W. Riley	"	Millford Bay	"
Jas. Dale	Miller	Lake of Bays	"
R. Robinson	Tailor	Bracebridge	"
C. E. Mawdsley	Clerk	"	"
H. McGinnis	"	"	"
J. Hall	Farmer	Stephenson	"
J. Wasdell	Butcher	Bracebridge	"
J. Hillman	Tinsmith	"	"
J. S. Niven	Members of London Gun Club.	London	Middlesex.
J. H. Fraser		"	"
Fred T. Trebilcock		"	"
Wm. Woodruff		"	"
F. J. Hammond		"	"
W. F. Strong		"	"
L. McDonald		"	"
H. S. Blackburn		"	"
W. A. Gill		"	"
Geo. C. Gibbons		"	"
John Pring	Hatter	"	"
Horace Mavon	Farmer	Komoka	"
W. H. Allison	Train Despatcher	London	"
T. K. Grigg	Hotel-keeper	"	"
D. Johnson	Teacher	Wardsville	"
W. Thomson	Writer	East Saginaw	Michigan, U. S. A.
Frank M. Comstock	Principal	Le Roy	New York, U. S. A.
A. W. Laurie	Merchant	Port Dover	Norfolk.
John Matthews	Farmer	Simcoe	"
Jos. T. Carson	Teacher	Simcoe	"
W. J. McInnes	Physician	Vittoria	"
W. J. W. Finlay	Clergyman	Simcoe	"
C. C. Rapeljie	Clerk County Court	"	"

QUESTIONS RELATING TO FISH.—*Continued.*

NAME.	OCCUPATION.	ADDRESS.	COUNTY.
J. M. Salmon	Physician	Simcoe	Norfolk
H. H. Groff	Banker	"	"
W. E. Tisdale	Barrister	"	"
S. M. Sovergeen	"	"	"
W. T. Nickerson	"	"	"
A. H. Elliott	Agent	Nosbonsing	Nipissing.
R. Jessup	Hunter	North Bay	"
J. P. Kirkwood	Farmer	"	"
M. S. Cassan	"	Campbellford	Northumberland.
J. Cassan, Jr.	"	"	"
C. Montgomery	"	Hilton	"
T. J. Nimmo	"	Bensfort	"
F. Bonnycastle	"	Campbellford	"
A. Orchard	"	Seagrave	Ontario.
A. Miller	Sportsman	"	"
H. Lestcott	Merchant	Beaverton	"
C. A. Paterson	Municipal Clerk	"	"
Arch. McLean	Farmer	Seagrave	"
E. Moore	Salesman	Uxbridge	"
Francis Lockhart	Farmer	Stayner	"
Wm. Watson	"	"	"
J. McRae	Merchant	Beaverton	"
Wm. Hersie	Farmer	Princeton	Oxford.
W. F. Nickerson	Auctioneer	Woodstock	"
E. E. Nickerson	Baker	"	"
A. N. Gissing	Druggist	Princeton	"
Robt. McLean	Farmer	Innerkip	"
Alex. Bell	Physician	Lakefield	Peterboro'.
G. W. Coones	Farmer	Apsley	"
Wm. McFarlane	Hotel-keeper	Young's Point	"
J. R. Fraser	Physician	Lakefield	"
F. Elmhurst	Reeve	Apsley	"
H. Winch	"	Peterboro'	"
H. Calcutt	"	"	"
R. A. Morrow	"	"	"
Thos. Eastwood	"	Hall's Bridge	"
R. C. Strickland	"	Lakefield	"
T. W. Gibbs	"	Peterboro'	"
F. J. Moore	"	Lakefield	"
Wm. Hall	"	Buckhorn	"
John Bennett	"	Peterboro'	"
G. S. Sproule	Photographer	"	"
R. Tivey	"	"	"
Alex. Paterson	"	"	"
R. Watson	"	"	"
Sam'l. Ray	Tobacconist	"	"
S. G. Steele	"	Lakefield	"
Jas. Richardson	"	"	"
R. E. Wood	"	Peterboro'	"
L. G. Steele, Jr.	Farmer	Lakefield	"
J. Richardson	Mason	"	"
Wm. Brownsfield	"	Peterboro'	"
G. Cochran	License Inspector	"	"
Wm. Brownscombe	Gentleman	"	"
J. P. Bush	Hotel-keeper	Belfountain	Peel.
K. Chisholm	Accountant	Brampton	"
J. Barnes	Farmer	Stanley House	Parry Sound.
Wm. Pearce	"	Sprucedale	"
C. W. Burns	Valuator	South River	"
J. Ibbitson	Farmer	Restoule	"
J. Clark	"	"	"
Wm. Clark	"	"	"
Donald Ross	Farmer	Turtle Lake	"
Thos. F. Carr	"	Trout Creek	"
Dan. Starrat	"	Starrat	"
J. Davie	"	Doe Lake	"
J. H. Spencer	Harnessmaker	McKellar	"
R. Appleby	Postmaster	Doe Lake	"

QUESTIONS RELATING TO FISH—*Continued.*

NAME.	OCCUPATION.	ADDRESS.	COUNTY.
J. Thom.....	Farmer.....	Doe Lake.....	Parry Sound.
Thos. J. Paget.....	Teacher.....	Restoule.....	"
Cyrus D. Lawrence.....	Farmer.....	Sprucedale.....	"
J. B. Purvis.....	Lumberman.....	Parry Sound.....	"
Thos. McGowan.....	Farmer.....	Featherstone.....	"
J. Joliffe.....	Lumberman.....	Parry Sound.....	"
Wm. Fry.....	Farmer.....	Monteith.....	"
Wm. Cargill.....	".....	Foley.....	"
A. Arnold.....	".....	".....	"
Frank Lafex.....	Storekeeper.....	Parry Sound.....	"
Ed. Taylor.....	Shoemaker.....	".....	"
Wm. Ireland.....	Journalist.....	".....	"
J. M. Anstey.....	Postmaster.....	".....	"
W. L. Haight.....	Barrister.....	".....	"
J. B. Legatt.....	Jeweller.....	".....	"
C. W. Burns, Jr.....	Manufacturer.....	South River.....	"
B. F. Kean.....	Sawlog Culler.....	Parry Sound.....	"
G. O. Smith.....	Fire Ranger.....	Burk's Falls.....	"
J. H. Bell.....	Bush Ranger.....	".....	"
R. Thomas.....	Farmer.....	Deacon.....	Renfrew.
Donald Southerland.....	".....	Micksburg.....	"
Wm. Scott.....	".....	Renfrew.....	"
A. Hamilton, Jr.....	".....	Pembroke.....	"
John Hunt.....	".....	Mount St. Patrick.....	"
John Brady.....	Forest Ranger.....	Renfrew.....	"
Alex. Parks.....	Farmer.....	".....	"
F. Byers.....	Farmer.....	".....	"
R. Cameron.....	".....	Horton.....	"
Jno. McRae.....	Gentleman.....	Renfrew.....	"
Jas. Craig.....	Barrister.....	".....	"
Jos. Beggs.....	Farmer.....	Pembroke.....	"
J. D. Deacon.....	Physician.....	".....	"
S. O. Gorman.....	Constable.....	Renfrew.....	"
Jn. Park.....	Gentleman.....	Horton.....	"
David Barr.....	".....	Renfrew.....	"
Xavier Plaunt.....	Farmer.....	Sebastapol.....	"
Donald McLaren.....	".....	Sandpoint.....	"
Xavier Plaunt, Jr.....	Hotel Clerk.....	Renfrew.....	"
G. W. Carr.....	Farmer.....	Point Alexander.....	"
R. A. Graham.....	Bush Ranger.....	Pembroke.....	"
Wm. Maves.....	Fire Ranger.....	".....	"
Aaron Sweezy.....	".....	Deux Rivières.....	"
John J. Gorman.....	Farmer.....	Esmonde.....	"
H. H. Sodan.....	Harnessmaker.....	Hillsdale.....	Simcoe.
Wm. Mortimer.....	Farmer.....	Mortimers' Point.....	"
Wm. Berry.....	".....	Walkers' Point.....	"
Thos. A. Millichamp.....	".....	Orillia.....	"
Alfred Morrow.....	Veterinary Surgeon.....	Minesing.....	"
H. B. Nicol.....	Physician.....	Cookstown.....	"
John Gray, Jr.....	Merchant.....	Coldwater.....	"
W. T. Moore.....	Teacher.....	Cookstown.....	"
A. McQuay.....	Farmer.....	Sunnidale.....	"
Frank J. Hammell.....	Veterinary Surgeon.....	Tottenham.....	"
J. P. Kidd.....	".....	Barrie.....	"
James Martin.....	Bailiff.....	Hillsdale.....	"
R. Wade.....	Gentleman.....	Orillia.....	"
J. R. Croft.....	Barber.....	Beeton.....	"
G. Strouthers.....	Lumberman.....	Hillsdale.....	"
R. Watson.....	Farmer.....	Stayner.....	"
J. E. Doner.....	".....	".....	"
F. G. M. Fraser.....	Fishery Overseer.....	Victoria Harbour.....	"
D. Somerville.....	Farmer.....	Stayner.....	"
Jas. Duncan.....	".....	Restville.....	"
W. H. Anderson.....	".....	Normandale.....	"
Ed. Parker.....	".....	".....	"
J. W. Ryerson.....	".....	".....	"
J. Lorne Campbell.....	".....	".....	"
T. Crosbie.....	Farmer.....	Lisle.....	"

QUESTIONS RELATING TO FISH.—*Continued.*

NAME.	OCCUPATION.	ADDRESS.	COUNTY.
J. O. Perry		Orillia	Simcoe.
E. R. Carpenter	Druggist	Collingwood	"
S. A. Whittaker	"	Hillsdale	"
W. J. Martin	Agent	"	"
J. P. Secord	Superintendent	Orillia	"
J. Hutton	Farmer	Hutton House	"
W. J. Rind		Bobcaygeon	Victoria.
F. Minns	Book-keeper	"	"
E. Bottum	Lock-master	"	"
W. Kennedy	Contractor	"	"
Scott & Sadler	Hotel-keepers	Kinmount	"
E. E. R. Edwards	Livery keeper	Fenelon Falls	"
A. Knowlson		Lindsay	"
R. McGrath	Carpenter	"	"
John Finegan		"	"
W. J. Davis		"	"
H. Cohan		"	"
F. Crandell	Steamboat Captain	"	"
J. Littel		"	"
Wm. Mulcahy		"	"
B. Bryan		"	"
C. E. Gunsoles	Saddler	Bobcaygeon	"
H. L. Tribe	Farmer	Vankoughnet	"
Thos. Fee	"	Lindsay	"
H. R. Herriman	Lumberman	"	"
Wm. Heedler	Mill-owner	"	"
Thomas Walters		"	"
'Captain Rose		"	"
Alex. Ross		"	"
Jonathan Ellis		"	"
A. W. J. De Grassi	Physician	"	"
Alex. Murray	Farmer	Kinmount	"
Alex. Clifford	Miller	Kirkfield	"
J. Kinnear	"	Lindsay	"
Geo. Whistle	Butcher	Fenelon Falls	"
E. R. Edwards	Livery Stable Keeper	"	"
A. Stevens	Miller	"	"
Jas. Dickson	Provincial Land Surveyor	"	"
C. E. Bonnell	Physician	Bobcaygeon	"
A. E. Bottum	Merchant	"	"
W. T. C. Boyd	"	"	"
Jn. Sedgwick	Farmer	Snowden	"
Geo. M. Hendrie	Manager	Hamilton	Wentworth.
A. E. Malloch	Physician	"	"
Jno. S. Hendrie	Contractor	"	"
Albert Smyth		"	"
Jas. Crooks	Hotel-keeper	"	"
Thos. Hutchinson	Engineer	"	"
E. Tinsley	"	"	"
Andrew Ross	Commission Merchant	"	"
J. J. Steele	Maltster	"	"
T. Dalton		"	"
Sam'l. McNair	Bailiff	"	"
Wm. Morton	Merchant	"	"
Wm. Drayton	"	"	"
J. O. McGregor	Physician	Waterdown	"
John Smith	Agent	Hamilton	"
A. Bowman	Gentleman	"	"
L. Snider	Agent	Binbrook	"
E. Dalton	Farmer	Nelson	"
Geo. McCurley	"	"	"
D. McLaren	"	"	"
Wm. Payne	Bolt-maker	Hamilton	"
D. Maddocks	Iron Finisher	"	"
R. A. Kennedy	Journalist	"	"
Thos. L. Stephen	} Wild Fowler's Gun Club	"	"
F. V. Spencer		"	"
Joseph Gates	Customs Officer	"	"

QUESTIONS RELATING TO FISH.—*Continued.*

NAME.	OCCUPATION.	ADDRESS.	COUNTY.
A. McKeand		Hamilton	Wentworth.
T. Goldie	Miller	Guelph	Wellington.
Robt. Aitkin	Farmer	Speedside	"
S. Duffield	"	Eramosa	"
J. Anderson	Book-keeper	Guelph	"
J. Gibbs	Finisher	"	"
A. R. Woodyatt	Manufacturer	"	"
R. Webster	"	"	"
A. L. Wilson	Gentleman	"	"
A. C. Chadwick	Judge	"	"
G. A. Richardson	Secy. Guelph Gun Club	"	"
T. T. Garrett	Tailor	Wellington	"
Wm. Pettit	Grocer	"	"
C. C. Spencer	Gentleman	Rose Hall	"
Jos. Garner	Farmer	Fenwick	Welland.
W. R. Bassett	"	Pine Orchard	York.
J. Mackelcan	"	Toronto	"
Robt. Kilgour	Manufacturer	"	"
J. Richardson	Physician	"	"
J. W. Mencke	"	"	"
R. Wilson	Farmer	Sharon	"
W. C. Beddome	Accountant	Toronto	"
S. G. Beatty	Publisher	"	"
Wm. H. McConnell	Druggist	"	"
D. J. Ross	Pres f Ochtwan Sporting	"	"
J. B. Henderson	Sec'y. { Club	"	"
S. J. Stammers	Banker	"	"

ONTARIO FISH AND GAME COMMISSION.

QUESTIONS RELATING TO FISH.

Your Commissioners have been quite unable to classify the answers received to the questions relating to Fish. This is owing entirely to the great difference of opinion on the part of the witnesses examined, as to the proper close and open seasons.

The enquiries made lead your Commissioners to believe that this is probably the most important as well as the most difficult question with which the Government will have to deal.

Without very exhaustive enquiries, careful experiments, and close observations, requiring of necessity much time, and involving a considerable expenditure of money, it will be impossible to arrive at a satisfactory solution regarding the best arrangement of the seasons, and the re-stocking of the now depleted waters.

This work must be left to a permanent Commission to overtake ; it cannot be done quickly, and will require the most careful thought and research that it is possible to give it.

ONTARIO GAME AND FISH COMMISSION.

QUESTIONS RELATING TO FISH.

1. In what waters have you taken or observed any of the following fishes ?
State spawning times.

NAME OF FISH.	NAME OF WATER.	COUNTY OR DISTRICT.	SPAWNING TIME.	
			Begins.	Ends.
Common Speckled Trout or.....				
Brook Trout.....				
River Trout.....				
Great Lake Trout.....				
Salmon Trout.....				
White Fish.....				
Bass—Small Mouthed Black....				
“ Large “ or Oswego				
“ Rock				
“ Silver.....				
Maskinonge.....				
Pickarel, (doré).....				
Pike.....				
Sheepshead.....				
Suckers.....				
Mullet.....				
Channel Catfish.....				
Gravling.....				
Mud Pout.....				
Eels.....				
Gold Eye.....				
Herring.....				
Chub... ..				
Shiners.....				
Perch.....				
Sun Fish.....				
Sturgeon.....				
Dog-fish.....				
Gar-pike.....				

NOTE 1.—Place a cross **X** before the names of valuable or useful food fishes in above list.

NOTE 2.—Place a square [] after the names of fish that are useful as food or valuable fish.

NOTE 3.—Place a line — under the names of fish that should be destroyed on every occasion.

2. Do you know of any other Ontario Fish ? If so, name them ?

Answer.—

3. Name waters that have been, to your knowledge, wholly or nearly depleted of Speckled or Brook Trout.

WATERS.	COUNTY.

4. Name waters wholly or nearly depleted, to your knowledge, of Black Bass, Maskinonge, Pickerel, Sturgeon.

WATERS.	COUNTY.

5. Name waters wholly or nearly depleted, to your knowledge, of Salmon Trout, Lake Trout, and White Fish.

WATERS.	COUNTY.

6. Draw a line under the written names of such of the above waters as are still clean, free from sawdust, or in a condition to be profitably re-stocked with fish fry or eggs.

7. What were the principal causes of destruction of fish in the depleted waters?

Answer

8. What illegal methods of killing fish are commonly practised to your knowledge?

Answer

9. The close seasons now set for fish are:

Speckled Trout, 1st September to 1st May.

Salmon Trout, }
White Fish, } 1st November to 30th November.

Bass, }
Maskinonge, } 15th April to 15th June.

Brook or River Trout, 15th April to 15th May.

Pickereel, 15th April to 15th May.

10. If you think any of the above close seasons improperly set, state which, and give your reasons.

Answer

11. Should pioneer settlers be allowed to take fish by legal methods at all seasons for their family food?

Answer

12. In what waters if any of your acquaintance should all netting be forbidden?

Answer.—

GENERAL QUESTIONS.

The general questions prepared by your Commissioners were answered by 604 persons as follows:—

NAME.	OCCUPATION.	ADDRESS.	COUNTY.
Robt. Clow	Farmer	Parham	Addington.
Jno. Forde	Fur-trader	Schreiber	Algoma.
A. W. Hodgson	Train Despatcher	Port William	"
John Pêche	Wood-ranger	Sudbury	"
Thos. Penfold	Gaoler	Port Arthur	"
Wm. Griffiths	Farmer	Little Current	"
H. M. Smith	Miller	Southampton	Bruce.
Joseph Robinson	Merchant	Wiarton	"
Cecil Swale	Farmer	"	"
Augustus Smith	Brick Manufacturer	Port Elgin	"
Game Protection Association		Wiarton	"
J. H. Garnier	Physician	Lucknow	"
Geo. Mair	Banker	"	"
Ed. Weatherall	Baker	Southampton	"
A. F. Bowman	Tanner	"	"
G. V. Zinkan	Merchant	"	"
C. E. Start	Solicitor	Tara	"
W. J. Topley	Photographer	Ottawa	Carleton.
W. W. Boucler	Veterinary Surgeon	"	"
Geo. C. Wood	P. O. Department	"	"
P. A. McDougal	Physician	"	"
A. H. Johnson	Farmer	Castleford	"
F. H. F. Mercer	Clerk	Ottawa	"
T. G. Carpenter	Agent	Arnprior	"
J. B. Spence	Hotel-keeper	Ottawa	"
F. G. Vanderlip	"	"	"
W. P. Lett	City Clerk	"	"
W. R. McEwan	Geological Department	"	"
H. D. J. Lane	Militia Department	"	"
L. J. Coursolles	Patent Agent	"	"
John T. G. Whyte	Lumberman	"	"
Jno Stewart	Provincial Land Surveyor	"	"
W. P. Batterton	Book-keeper	"	"
Henry Smith	Sergeant-at-Arms	"	"
G. C. Rainboth	Prov. Land Surveyor	Aylmer	"
Alex. Stewart	Farmer	Hintonburg	"
Wm. O'Leary	"	Loretto	Cardwell.
H. H. Burnham	Gentleman	Port Hope	Durham.
Job Dickinson	Farmer	Zion	"
R. Dianer	Cooper	"	"
W. McIntosh	Insurance Agent	Newcastle	"
Geo. M. Furby	Manager	Port Hope	"
J. P. Fox	Pres Gun Club	Orangeville	Dufferin.
C. W. Gauthier	Fisherman	Windsor	Essex.
P. C. Ponting	Prop. Truck Co.	"	"
C. F. Cornetet	Fisherman	Belle River	"
Geo. Cheyne	Secretary Gun Club	Windsor	"
Victor Pillon	Carriage Manufacturer	Vereker	"
Jos. Winter	Pork-packer	Windsor	"
Geo. A. Goodman	Builder	"	"
Dan G. Revel	Conductor	"	"
Wm. Donaldson	Painter	"	"
C. L. Paré	Manufacturer	"	"
R. Vigneaux	Carpenter	"	"
A. Orouillard	Custom Officer	"	"
Wm. P. Hutchins	N'th Aududer. Shoot'g Club.	"	"
Alf. Zavity	Carpenter	Sparta	Elgin.
A. White	Lumberman	Orwell	"
R. J. Mills	Insurance Agent	Kingston	Frontenac.
Thos. A. Carson	Merchant	"	"
Wm. A. Wagar	Farmer	Parkham	"
M. Crank	"	"	"
J. G. Gordon	"	"	"
T. G. Sharmar	Boat Builder	Kingston	"

GENERAL QUESTIONS.—*Continued.*

NAME.	OCCUPATION.	ADDRESS.	COUNTY.
John Legatt.....	Agent	Owen Sound	Grey.
Jas. Gladstone ..	Bar-tender	"	"
E. G. Rodgers	Vet. Surgeon	Meaford	"
John Bennett	Farmer	Athol	Glengarry.
Fred B. Lacey	"	Beechmount	Hastings.
Jas. T. Bell	County Clerk	Belleville	"
P. P. Clark	Merchant	St. Oia	"
Robt. McLean	Farmer	Boulter	"
Jos. Stoneburg	Policeman	Belleville	"
Hirman Bell	Farmer	Frankford	"
Stephen Badgley ..	"	Stirling	"
C. I. Barager	"	Sine	"
Thos. J. Moore	"	St. Oia	"
Geo. Pattison	"	Coe Hill Mines	"
Bidwel Sine	"	Harold	"
Willett Turner	Hunter	Faraday	"
Geo. McAllister ..	"	Boulter	"
Robt. Hewton	"	Faraday	"
J. W. Ham	Farmer	St. Oia	"
Thos. Nugent	"	Nugent	"
Henry Bird	"	The Ridge	"
John Campbell	"	Havergal	"
J. C. George	Postmaster	Bancroft	"
Gilbert Holmes	Farmer	St. Oia	"
J. McAllister	"	Bird's Creek	"
R. C. Fair	Stone Merchant	Bancroft	"
A. G. Allison	Train Despatcher	Belleville	"
Wm. H. Sweet	County Constable	Bancroft	"
H. Dennson	Farmer	Purdy	"
D. R. Leavens	Gentleman	Belleville	"
E. B. Fralick	Judge	"	"
E. N. Leavens	"	"	"
Fred Root	"	"	"
John N. Pringle	"	"	"
J. N. Loudon	"	"	"
Geo. Twining	"	"	"
Ed. Johnson	Bush-ranger	Bancroft	"
Fred Mullett	Hotel Proprietor	"	"
Henry Foster	Farmer	Faraday	"
Peter Wright	"	St. Oia	"
R. S. Tivey	Merchant	Coe Hill	"
Wm. S. Clarke	Farmer	Holloway	"
W. J. Austin	Merchant	Haliburton	Haliburton.
C. S. Austin	Gentleman	"	"
Geo. Bemmister	Civil Engineer	"	"
Jas. Worley	Cabinet-maker	"	"
Jno. Reid	Carpenter	"	"
Jno. Lucas	Hotel-keeper	"	"
Eldridge Leith	Merchant	"	"
F. O'Connor	Trapper	"	"
C. R. Stewart	Gentleman	"	"
Joseph Kellett	Hotel-keeper	"	"
Jos. Paul	Butcher	"	"
Stephen Dawson	Farmer	"	"
Fred Freeman	Merchant	"	"
L. M. Neily	Shoemaker	"	"
Geo. Tutt	Guide	Dorset	"
John Sedgewick	Farmer	Gelert	"
D. Redner	Trapper	Maple Lake	"
E. W. Lockman	Guide	Dorset	"
Thos. Scott	Farmer	Kennaway	"
Arch. McCall	Farmer	Gooderham	"
Walter Parish	"	Haliburton	"
Richard Davis	Shoemaker	Minden	"
Chas. Way	Postmaster	Gooderham	"
John Boyes	Farmer	Nelson	Halton.
Thos. Ireland	"	"	"
Joe Wilson	"	Ash	"

GENERAL QUESTIONS.—Continued.

NAME.	OCCUPATION.	ADDRESS.	COUNTY.
Wm. Pantou	Editor	Milton	Halton.
A. Clements	Farmer	Trafalgar	"
Geo. McKerlie	"	Nelson	"
T. J. Wheeler	"	Georg-town	"
Caleb Lonsley	Farmer	Trafalgar	"
S. A. Beck	Saw miller	S. Cayuga	Haldimand.
J. F. Crawford	"	Dunnville	"
Fred Lowe	Gentleman	"	"
John Green	Guide	"	"
Isaac Wismer	"	Cayuga	"
Martin Green	"	Dunnville	"
W. G. Wismer	"	Cayuga	"
Wm. McIndoe	"	Dunnville	"
Freeman Green	"	"	"
J. C. Eccles	Barrister	"	"
Jas. Smith	"	"	"
Jas. Clifford	"	"	"
Wm. Lambier	"	"	"
Jas. Vanderburg	"	"	"
Lewis Fox	"	"	"
Owen Fathers	Farmer	South Cayuga	"
Jos. Fathers	"	"	"
S. W. Hornbrook	Stock-farmer	Dunnville	"
John Farrell	"	Cayuga	"
J. A. McKellar	Pres. Game Association	Ridgetown	Kent.
H. A. Mallory	Secretary	"	"
P. D. Bates	Fisherman	"	"
Wm. Weldon	Hotel-keeper	Morpeth	"
D. R. Watson	Caretaker	"	"
Samuel Burk	Farmer	Blenheim	"
Marshall Burk	Labourer	"	"
W. B. Wells	Clerk	Chatham	"
John Mercer	Sheriff	"	"
Gordon Boles	Captain	"	"
I. L. Nichols	Dentist	"	"
Jas. Thomas	Farmer	Raleigh	"
Wm. Crow	"	Dover	"
S. Holme	Merchant	Chatham	"
Abbott Wilcox	Farmer	Dover	"
G. A. Loyer	Law Student	Chatham	"
David Wilson	Farmer	Harwich	"
Jas. McGarvin	"	Dover	"
P. McGarvin	"	"	"
Alex. Ducedre	"	"	"
Geo. Kime	"	"	"
A. Alexander	"	"	"
T. B. Gillard	Banker	Wallaceburg	"
W. L. Cameron	Farmer	Harwich	"
Chas. Fastlake	Merchant	Ridgetown	"
H. J. O'Lone	Hardware Merchant	"	"
N. Massey	Farmer	Chatham	"
Jas. Kime	Vet. Surgeon	"	"
C. Wheeler	Merchant	"	"
D. Smith	Farmer	"	"
A. Williams	"	Raleigh	"
Jas. Rankin	"	Ridge-town	"
F. H. Nelson	Bailiff	Chatham	"
Jas. Hamilton	Fisherman	Jeanett's Creek	"
John Houston	Farmer	Harwich	"
Henry Dagneau	Hardware Merchant	Chatham	"
H. A. Crow	Farmer	Raleigh	"
W. A. Campbell	Clerk Co. Court	Chatham	"
Wm. B. Cameron	Farmer	"	"
W. E. Hall	Insurance Agent	Blenheim	"
J. B. Reynolds	Postmaster	Rond Eau	"
T. P. Warner	Farmer	Guilds	"
F. McEwan	Physician	Carleton	Lanark.
G. H. Gilbert	Hair-dresser	Almonte	"

GENERAL QUESTIONS.—Continued.

NAME.	OCCUPATION.	ADDRESS.	COUNTY.
Isaac Korry	Saw-miller	Maberley	Lanark.
F. McEwen	Physician	Carleton Place	" "
J. C. Armtroug	Dentist	Almonte	" "
D. Campbell	Tailor	"	" "
Robt. Bowie	Brewer	Brockville	Leeds.
J. K. Thomson	"	Rockport	" "
Wm. Neilson	"	"	" "
H. T. Fitzsimmons	"	"	" "
Ed. Senecal	Carsman	"	" "
Jas. Fitzpatrick	Mechanic	Brockville	" "
Douglas H. Cole	Barrister	Newboro	" "
Jas. Paton	Gentleman	Beamsville	Lincoln.
A. D. Woodruff	"	St. Catharines	" "
Peninsula Gun and Game Club	"	"	" "
F. Van de Bogart	Ranchman	Napanee	Lennox & Addington.
— Sills	Farmer	"	" "
J. C. Hoffman	Druggist	"	" "
Wm. Gohm	Farmer	Bracebridge	Muskoka.
Thos. Burgess	Saw-mill Prop.	Bala	" "
E. J. Gouldie	Farmer	Dwight	" "
B. S. Beley	"	Rosseau	" "
R. Clarke	"	Port Sidney	" "
W. G. Stewart	"	Brackenrig	" "
Harris Denara	"	Baysville	" "
John Telfer	"	Gi-ka	" "
Wm. Terry	Settler	Vankoughnet	" "
Chris. Sawyer	Hunter	Dorset	" "
John Cooper	Hunter	Bracebridge	" "
Donald Gordon	Farmer	Magnetawan	" "
D. E. Hough	"	Port Carling	" "
Henry Austin	Yeoman	Bardsville	" "
Wm. Clarke	Carpenter	Port Sydney	" "
H. J. King	Butcher	Gravenhurst	" "
W. J. Miller	Farmer	Vankoughnet	" "
T. Currie	"	Bala	" "
F. Kent	Vet. Surgeon	Bracebridge	" "
C. Henderson	Bush-ranger	"	" "
Singleton Brown	Lumberman	"	" "
J. Wasdell	Butcher	"	" "
W. H. Green	Hunter	Grassmere	" "
Thomas E. T. Salmon	Farmer	Dwight	" "
Chas. W. Riley	"	Millford Bay	" "
Geo. Brown	Carpenter	Bracebridge	" "
Ed. Goldie	Farmer	Dwight	" "
Wm. Craft	"	Doe Lake	" "
Jos. S. Wallis	Merchant	Port Carling	" "
Frank Pokorney	Guide	Huntsville	" "
John Board	Hotel-keeper	Bala	" "
Jas. Fowler	Farmer	Seeley Brunel	" "
Iden Goble	"	Port Sandfield	" "
E. J. Brooks	Postmaster	Antioch	" "
Jas. Clark	Farmer	Monsell	" "
Francis Hammell	"	Antioch	" "
A. H. Campbell	Manager Muskoka Mills	Muskoka Mills	" "
John May	Farmer	Port Carling	" "
Geo. Langford	"	Bracebridge	" "
Jos. Clarke	Merchant	Aspdin	" "
E. F. Stephenson	Journalist	Bracebridge	" "
Arthur Monteith	Hunter	Rosseau	" "
H. Spencer	House-maker	McKellar	" "
R. Appleby	Postmaster	Doe Lake	" "
John Thom	Farmer	"	" "
J. Vankoughnet	"	Falding	" "
H. Vankoughnet	"	"	" "
Thos. McGowan	"	Featherstone	" "
Wm. Fry	"	Monteith	" "
Wm. Cargill	"	Foley	" "
Alex. Arnett	"	"	" "

GENERAL QUESTIONS.—Continued.

NAME.	OCCUPATION.	ADDRESS.	COUNTY.
Erastus Haines	Postmaster	Utterson	Muskoka.
Newman Austin	Farmer	"	"
Wm. Jarvis	Purser	W. Gravenhurst	"
Alfred Hunt	Banker	Bracebridge	"
Jas Boyer	Clerk	"	"
J. C. Davidson	"	"	"
Joseph Ripkie	Stonemason	"	"
John Dale	Miller	Lake of Bays	"
Robt. Robinson	Jailer	Bracebridge	"
Chas. E. Mawdsley	Clerk	"	"
Hector McGinnis	"	"	"
Jas. Hall	Farmer	Stephenson	"
Jas. Hillman	Tinsmith	Bracebridge	"
W. Thomson	Writer	East Saginaw	Michigan, U. S. A.
A. G. Chisholm	Barrister	London	Middlesex.
John Pring	Hatter	"	"
J. S. Niven	Member London Game Club	"	"
J. H. Fraser	"	"	"
Fred T. Trebilcock	"	"	"
Wm. Woodruff	"	"	"
E. J. Hammond	"	"	"
W. F. Strong	"	"	"
L. McDonald	"	"	"
H. S. Blackburn	"	"	"
W. A. Gill	"	"	"
Geo. Gibbons	"	"	"
John Burns	Bailiff	"	"
W. H. Allison	Train Despatcher	"	"
D. Johnson	Teacher	Wardsville	"
R. Powell	Farmer	Calder	"
N. H. Reemer	Physician	London	"
M. J. Kemp	Banker	"	"
H. A. Nicholson	"	"	"
E. A. Cleghorn	Wholesale Grocer	"	"
L. McDonald	Dentist	"	"
W. T. Williams	Chief of Police	"	"
Wm. Avey	Avey House	"	"
Wm. LaRush	Fisherman	Kagawong	Manitoulin District.
J. P. Kirkwood	Farmer	North Bay	Nipissing.
T. G. Gagnon	Parish Priest	Nosbonsing	"
R. Jessup	Hunter	North Bay	"
C. Montgomery	Farmer	Hilton	Northumberland.
J. W. Linwoodie	Contractor	Campbellford	"
J. H. McMaster	Mariner	Brighton	"
T. C. Sickwood	Postmaster	"	"
F. Bonnycastle	Farmer	Campbellford	"
T. J. Nimmo	"	Bensfort	"
R. H. Bonnycastle	"	Campbellford	"
Wm. P. Esterbrook	Architect	Rahway	New Jersey, U. S. A.
W. J. Finlay	Clergyman	Simcoe	Norfolk.
Clarence C. Rapeljie	Clerk County Court	"	"
J. M. Salmon	Surgeon	"	"
H. H. Groff	Banker	"	"
John Matthews	Farmer	"	"
W. J. McInnes	Physician	Vittoria	"
Jos. T. Carson	Teacher	Simcoe	"
S. M. Sovereegn	"	"	"
W. E. Tisdale	"	"	"
Jas. Duncan	"	Forestville	"
W. H. Anderson	"	Normandale	"
J. W. Ryerson	"	Norfolk	"
Ed. Parker	"	Normandale	"
F. Patterson	"	"	"
W. F. Nickerson	"	Simcoe	"
L. McDonald	"	Port Rowan	"
J. B. Ficke	"	"	"
J. Lorne Campbell	"	Simcoe	"
J. Brown	"	Port Rowan	"

GENERAL QUESTIONS.—Continued.

NAME.	OCCUPATION.	ADDRESS.	COUNTY.
J. H. Helmer		St. Williams	Norfolk.
Jas. Overholt		Normandale	"
F. M. Comstock		Leroy, Genesee Co	New York, U. S. A.
A. Gissing	Druggist	Princetown	Oxford.
Robt. McLean	Farmer	Innerkip	"
Wm. Hersie.	"	Princeton	"
F. Cuthbertson	Architect	Woodstock	"
John Cowan	Farmer	Bright	"
H. Westcott	Hardware Merchant	Beaverton	Ontario.
C. A. Paterson	Municipal Clerk	"	"
E. Moen	Salesman	Uxbridge	"
D. McCard	Conveyancer	"	"
Arthur Miller	Sportsman	Seagrave	"
R. S. Cole	Farmer	Dorset	"
J. Kinnear	Miller	Lindsay	"
A. McLean	Farmer	Seagrave	"
A. W. Laurie	Merchant	Port Dover	"
Albert Orchard	Farmer	Seagrave	"
John McRae	Merchant	Beaverton	"
Geo. Gregory	Farmer	Wicksteed	Peterboro'.
F. Elmhirst	Warden	Apsley	"
J. D. Collins		Peterboro'	"
Wm. Hall		Buckhorn	"
T. W. Gibbs		Peterboro'	"
John Bennett		"	"
R. C. Strickland		Lakefield.	"
H. Calcutt		Peterboro'	"
Geo. Cochrane		"	"
Wm. Brownscombe		"	"
Alex. Paterson	Butcher	"	"
R. E. Wood		"	"
R. Watson		"	"
Samuel Ray	Tobacconist	"	"
L. G. Steele		Lakefield	"
R. Tivey		Peterboro'	"
John Richardson		Lakefield	"
J. F. Lillierap	Salesman	"	"
Thos. F. Wallace	Stock-dealer	"	"
W. A. Eastland	Grocer	"	"
John E. Richardson	Canoe Builder	"	"
Thos. Gordon	"	"	"
Wm. McFarlane	Hotel-keeper	Young's Point	"
John Lean	Farmer	Apsley	"
G. W. Coones	"	"	"
Thos. G. Eastland	Postmaster	"	"
Geo. S. Sproule	Photographer	Peterboro'	"
Alex. Bell	Physician	Lakefield.	"
Wm. H. Casement	Merchant	"	"
J. J. Welsh	Blacksmith	Apsley	"
John Richardson	Stonemason	Lakefield	"
Thos. J. Paget	School Teacher	Restoule	Parry Sound.
C. D. Lawrence	Farmer	Sprucedale	"
B. F. Kean	Lumber Culler	Parry Sound	"
G. O. Smith	Bush-ranger	Burk's Falls	"
Wm. McConnell	Labourer	"	"
J. H. Bell	Bush-ranger	"	"
John Davie	Farmer	Doe Lake	"
Dan Starrat	"	Starrat	"
John Ibbotson	"	Restoule	"
Wm. Clarke	"	"	"
John Clarke	"	"	"
Horace N. Crossley	"	Sandy Bay	"
John Barnes	"	Stanley House	"
T. B. Purvis	Lumberman	Parry Sound	"
Jacob Jolliffe	"	"	"
Frank Laffex	"	"	"
Ed. Taylor	"	"	"
J. M. Ansley	Postmaster	"	"

GENERAL QUESTIONS.—Continued.

NAME.	OCCUPATION.	ADDRESS.	COUNTY.
J. R. Legatt	Watchmaker	Parry Sound	Parry Sound.
W. L. Haight	Barrister	"	"
C. W. Burns	Explorer	South River	"
D. Ross	Farmer	Turtle Lake	"
Wm. Ireland	Publisher	Parry Sound	"
Wm. Pearce	Postmaster	Sprucedale	"
C. W. Burns, Jr.	Manufacturer	South River	"
Thos. F. Carr	Farmer	Front Creek	"
J. F. Garrett	Tailor	Wellington	Prince Edward.
A. L. Wilson	Gentleman	"	"
M. Pettit	"	"	"
C. C. Spencer	Gentleman	Rose Hall	"
Jas. Hart	Merchant	Demorestville	"
W. A. Anderson	Farmer	Mountain View	"
A. C. Shaw	Barrister	Stratford	Perth.
Jno. P. Bush	Hotel-keeper	Belfountain	Peel.
Kenneth Chisholm	Accountant	Brampton	"
G. A. Farmer	Banker	Montreal	Quebec.
E. A. St. Denis	Merchant	Point Fortune	"
Geo. Sutherland	"	Micksburg	Renfrew.
Geo. Kidd	Farmer	Pembroke	"
Geo. Carr	"	Port Alexander	"
Wm. Scott	"	Renfrew	"
Philip Dontigny	Woollen Manufacturer	Arnprior	"
Geo. D. Bayne	Minister	Pembroke	"
Alex. Parke	Farmer	Eganville	"
Richard Thomas	"	Deacon	"
John Brady	Forest-ranger	Pembroke	"
R. A. Graham	Bush-ranger	"	"
A. McDonald	Fisherman	Carswell	"
Aaron Sweezy	"	Deux Rivières	"
J. J. Gorman	Farmer	Esmonde	"
John Park	Gentleman	Horton	"
S. O'Gorman	Constable	Renfrew	"
J. Beggs	Farmer	Pembroke	"
J. D. Deacon	Physician	"	"
David Barr	Gentleman	Renfrew	"
Frank Byers	Farmer	"	"
John McRae	Gentleman	"	"
Jas. Craig	Barrister	"	"
W. B. Thomas	Farmer	Esmonde	"
Wm. Maves	Trapper	Pembroke	"
Robt. Cameron	Farmer	Horton	"
Xavier Plaut	"	Sebastapol	"
Donald McLaren	"	Sandpoint	"
Xavier Plaut, Jr.	Hotel-keeper	Renfrew	"
Jos. Briggs	Farmer	Pembroke	"
John Hunt	"	Blythfield	"
J. T. Harbour	"	Glen Orchard	Simcoe.
John Gray, Jr.	Merchant	Coldwater	"
W. R. Rowland	Clerk	Collingwood	"
Thos. Elliott	Merchant	Cookstown	"
V. A. Hart	Agent	Dalston	"
W. J. Martin	"	Hilldale	"
S. A. Whittaker	Druggist	"	"
W. H. Soden	Harness-maker	"	"
A. McQuay	Farmer	Sunnidale	"
R. Wade	Gentleman	Orillia	"
J. O. Perry	Merchant	"	"
J. R. Croft	Barber	Beeton	"
J. P. Kidd	"	Barrie	"
Wm. Berry	Farmer	Walker's Point	"
John Hutton	"	Hutton House	"
F. G. M. Fraser	Fishery Overseer	Victoria Harbour	"
D. Somerville	Farmer	Stayner	"
Rd. Watson	"	"	"
N. M. Livingston	Banker	Alliston	"
Jas. Dinwoodie	Farmer	Cookstown	"

GENERAL QUESTIONS.—Continued.

NAME.	OCCUPATION.	ADDRESS.	COUNTY.
W. F. Moore.....	Teacher	Cooktown	Simcoe.
J. Cockburn.....	Farmer	Edgar	"
Geo. Ross.....	Carpenter	Midland	"
Je-se E. Doner.....	Farmer	Stayner	"
Gideon Strothers.....	Lumberman	Hillsdale	"
Jas. Martin.....	Bailiff	"	"
Wm. Carr.....	Farmer	Bala	"
F. J. Hammell.....	Vet-rinary Surgeon	Tottenham	"
Ed. Bathie.....	Farmer	Cooktown	"
Wm. Mortimer.....	"	Mortimer's Point	"
W. C. Seluciles.....	Store-keeper	Allandale	"
R. Farmer.....	Lumberman	Edgar	"
Thos. Crosbie.....	Farmer	Lisle	"
Alfred Morrow.....	Veterinary Surgeon	Minesing	"
T. A. Millichamp.....	Farmer	Orillia	"
Francis Lockhart.....	"	Stayner	"
Wm. Watson.....	"	"	"
R. H. Ryan.....	Foreman	Port Severn	"
H. B. Nicol.....	Physician	Cooktown	"
J. P. Secord.....	Superintendent Hospital	Orillia	"
H. Jones.....	Farmer	Sunnidale Corners	"
Jas. Dickson.....	Provincial Land Surveyor	Fenelon Falls	Victoria.
C. E. Bonnell.....	Physician	Bobcaygeon	"
W. J. Reid.....	Merchant	"	"
W. T. C. Boyd.....	"	"	"
A. E. Bottum.....	"	"	"
John Sedgewick.....	Farmer	Snowden	"
Geo. Whistle.....	Butcher	Fenelon Falls	"
A. Stephens.....	Miller	"	"
R. McGrath.....	Carpenter	Lindsay	"
A. Knowlson.....	Clerk	"	"
A. Murray.....	Farmer	Kinmount	"
Robt. Boynton.....	Student	Kirkfield	"
A. Knowlson.....	"	Lindsay	"
J. Finegan.....	"	"	"
W. J. Davis.....	"	"	"
Henry Cohen.....	"	"	"
Freemont Crandell.....	"	"	"
Joseph Littell.....	"	"	"
Wm. Mulcahy.....	"	"	"
B. Bryan.....	"	"	"
Thos. Fee.....	"	"	"
F. C. Hood.....	Physician	"	"
C. Spillsburg.....	"	"	"
A. H. Hopkins.....	"	"	"
J. Wallace.....	"	"	"
A. W. J. De Grassi.....	Physician	"	"
J. G. Edwards.....	Hardware Merchant	"	"
Wm. Gidley.....	Superintendent Mill	Bobcaygeon	"
N. B. Tribe.....	Farmer	Vankoughnet	"
Chas. E. Gunsoles.....	Saddler	Bobcaygeon	"
H. L. Tribe.....	Farmer	Vankoughnet	"
Wm. Kennedy.....	Contractor	Bobcaygeon	"
Wm. Needler.....	Mill Owner	Lindsay	"
Franklin Crandell.....	Steamboat Captain	"	"
H. R. Herriman.....	Lumberman	"	"
Geo. Bradshaw.....	Agent	"	"
S. Armitage.....	Farmer	Cambay	"
Jos. Wells.....	Carpenter	"	"
J. Simpson.....	Physician	Lindsay	"
F. Minniss.....	Book-keeper	Bobcaygeon	"
E. Bottum.....	Lock-master	"	"
Thos. Fox.....	Farmer	Lindsay	"
E. R. Edwards.....	Livery-keeper	Fenelon Falls	"
A. R. Mead.....	"	Bobcaygeon	"
A. Edgar.....	Lumberman	"	"
W. H. Bottum.....	Steamboat Captain	"	"
Thos. Goldie.....	Miller	Guelph	Wellington.

GENERAL QUESTIONS.—*Concluded.*

NAME.	OCCUPATION.	ADDRESS.	COUNTY.
Robt. Aitken.....	Farmer	Speedside	Wellington.
G. A. Richardson	Secretary Guelph Gun Club.	Guelph.....	"
J. Gibbs	Finisher	"	"
Thos. Holden	"	"	"
R. Webster	"	"	"
S. Duffield	Farmer	Eramosa	"
A. C. Chadwick	Judge	Guelph.....	"
A. R. Woodyat	Manufacturer	"	"
J. Garner	Farmer	Fenwick	Welland.
John Hammon	Hotel Proprietor	Welland	"
J. B. Ficke	"	"	"
Wild Fowlers Gun Club	"	Hamilton	Wentworth.
R. E. Kennedy	Journalist	"	"
J. I. McKenzie	Inspector	"	"
E. Dalton	Farmer	Nelson	"
Geo. McCurley	"	"	"
D. McLaren	"	"	"
Wm. Payne	Bolt-maker	Hamilton	"
David Maddocks	Iron Finisher	"	"
J. O. McGregor	Physician	Waterdown	"
A. Bowman	Gentleman	Hamilton	"
Lewis Snider	Agent	Hinbrook	"
W. C. Baker	"	Hamilton	"
Wm. Morton	Game Dealer	"	"
Wm. Drayton	"	"	"
S. McNair	Bailiff	"	"
A. E. Malloch	Physician	"	"
John S. Hendrie	Contractor	"	"
Albert Smyth	"	"	"
John Smith	Agent	"	"
James Crooks	Hotel-keeper	"	"
Thos. Hutchinson	Engineer	"	"
E. Tinsley	"	"	"
Andrew Murdoch	Agent	"	"
A. Ross	Commission Merchant	"	"
C. Lonsley	Farmer	Trafalgar	"
A. Clements	"	"	"
J. J. Steele	Maltster	Hamilton	"
G. M. Hendrie	Manager	"	"
A. McKeand	"	"	"
Tho. Dalton	"	"	"
S. Joyce	Fisherman	Stoney Point	"
S. G. Beatty	Publisher	Toronto	York.
H. D. Weaver	Student	"	"
J. T. Townsend	Tele-graph Inspector	"	"
Wm. Brotherston	Carpenter	"	"
Isaac Dollery	Farmer	Fairbank	"
H. J. Maughan	Insurance Agent	Toronto	"
Magnetawan Sporting Club	"	Parkdale	"
J. Fisher	Builder	Eglington	"
R. Willson	Farmer	Sharon	"
S. J. Stammers	Banker	Toronto	"
Chas. A. Lony	Dentist	Newmarket	"
Stuart Scott	Physician	"	"
R. W. Gouinlock	Commercial Traveller	Toronto	"
J. B. Henderson	Ochtawan Sporting Club	"	"
J. W. Mencke	"	"	"
S. R. Clark	Barrister	"	"
J. Mackelcan	Farmer	"	"
W. R. Bassett	"	Pine Orchard	"
W. H. McConnell	Druggist	Toronto	"
R. H. Beatty	Merchant	"	"
W. A. Clarke	Clerk	Eglington	"
W. J. Middleton	Hotel-keeper	Toronto	"

ONTARIO FISH AND GAME COMMISSION.

GENERAL QUESTIONS.

These questions were answered by the 604 witnesses before-named as follows:

1. Are close seasons for Game and Fish generally respected in localities that you know of?

Yes	-	-	-	-	-	-	-	218
No	-	-	-	-	-	-	-	361
Not answered	-	-	-	-	-	-	-	25

★2. If not, what classes offend?

Indians and half-breeds	-	-	-	-	-	-	-	27
All classes	-	-	-	-	-	-	-	141
Farmers	-	-	-	-	-	-	-	23
Boys	-	-	-	-	-	-	-	47
Settlers	-	-	-	-	-	-	-	131
Railway men	-	-	-	-	-	-	-	1
Hunters	-	-	-	-	-	-	-	17
Lumbermen	-	-	-	-	-	-	-	11
Poachers	-	-	-	-	-	-	-	14
Pot-hunters	-	-	-	-	-	-	-	62
Fishermen	-	-	-	-	-	-	-	10
Foreign sportsmen	-	-	-	-	-	-	-	37
Idlers	-	-	-	-	-	-	-	52
Blank	-	-	-	-	-	-	-	166

3. Do many visitors shoot and fish in your neighbourhood?

Yes	-	-	-	-	-	-	-	385
No	-	-	-	-	-	-	-	176
Not answered	-	-	-	-	-	-	-	43

4. Do sporting and angling visitors put much money into circulation in your neighbourhood?

Yes	-	-	-	-	-	-	-	267
No	-	-	-	-	-	-	-	297
Not answered	-	-	-	-	-	-	-	40

★ The answers to this question do not tally in addition with the number of the witnesses, because many of the persons answering have given more than one reply.

5.	If the streams now depleted were re-stocked, and the game preserved, would your neighbourhood be considerably more attractive to visitors?						
	Yes	-	-	-	-	-	510
	No	-	-	-	-	-	47
	Blank	-	-	-	-	-	47
6.	Do you approve the suggestion that a Provincial force of Game and Fish Wardens, or protectors, should be established?						
	Yes	-	-	-	-	-	533
	No	-	-	-	-	-	47
	Blank	-	-	-	-	-	24
7.	If so, should the sub-protectors or sub-wardens be permanent residents of the localities under their supervision, and why?						
	Yes	-	-	-	-	-	421
	No	-	-	-	-	-	117
	Blank	-	-	-	-	-	66
8.	Can you suggest any method for raising a revenue from Game and Fish that would be sufficient to support non-resident sub-wardens?						
	Fees for export permits	-	-	-	-	-	8
	Tax on fishing nets	-	-	-	-	-	4
	License on guns	-	-	-	-	-	55
	License foreign sportsmen	-	-	-	-	-	109
	Letting townships to sporting associations	-	-	-	-	-	2
	No suggestions	-	-	-	-	-	521
	Fines to go direct to Government	-	-	-	-	-	29
	Expenses to be borne by Government direct	-	-	-	-	-	27
	License all guns except farmers	-	-	-	-	-	35
	Tax all sportsmen's outfits	-	-	-	-	-	5
	Lease small streams and lakes for fishing purposes	-	-	-	-	-	8
	Charge commission on all weapons sold by gun dealers	-	-	-	-	-	1
	Blank.	-	-	-	-	-	
9.	Do you approve the suggestion that every owner of sporting firearms should be required to register his weapon, receive a license to use it, and pay a nominal fee therefor?						
	Yes	-	-	-	-	-	232
	No	-	-	-	-	-	345
	Blank	-	-	-	-	-	27

10. Do you approve the suggestion that shooters and anglers, when sporting in counties where they do not reside, should be required to take out a local permit at a small fee, to go to the expense of supporting the local Game and Fish Warden ?
- | | | | | | | | | |
|-------|---|---|---|---|---|---|---|-----|
| Yes | - | - | - | - | - | - | - | 248 |
| No | - | - | - | - | - | - | - | 331 |
| Blank | - | - | - | - | - | - | - | 25 |
11. If you approve of hunting deer with hounds, should every owner of a hound used in running deer be required to take out a license for the dog ?
- | | | | | | | | | |
|-------|---|---|---|---|---|---|---|-----|
| Yes | - | - | - | - | - | - | - | 272 |
| No | - | - | - | - | - | - | - | 228 |
| Blank | - | - | - | - | - | - | - | 104 |
12. Should the exportation of game and speckled or brook trout from Ontario be entirely forbidden ?
- | | | | | | | | | |
|-------|---|---|---|---|---|---|---|-----|
| Yes | - | - | - | - | - | - | - | 476 |
| No | - | - | - | - | - | - | - | 93 |
| Blank | - | - | - | - | - | - | - | 35 |
13. If not, should outside sportsmen be required to pay something for permits to take their game and fish beyond the Province ?
- | | | | | | | | | |
|-------|---|---|---|---|---|---|---|-----|
| Yes | - | - | - | - | - | - | - | 207 |
| No | - | - | - | - | - | - | - | 108 |
| Blank | - | - | - | - | - | - | - | 289 |
14. Should dealers in game be required to take out licenses, forfeitable in case they violate the Game or Fish Protection Laws ?
- | | | | | | | | | |
|-------|---|---|---|---|---|---|---|-----|
| Yes | - | - | - | - | - | - | - | 432 |
| No | - | - | - | - | - | - | - | 104 |
| Blank | - | - | - | - | - | - | - | 68 |
15. Are there any extensive marshes or waste lands in your neighbourhood ?
Not necessary to answer here.
16. If so, name them and state whether the title is still in the Crown.
Not necessary to answer here.

- | | | |
|-------|--|-----|
| 17. | Do you approve the suggestion that residents near marshes or wastes should be encouraged to form associations to protect game and fish therein ; the privileges of the association to be open to all county people paying a small fee, and to visitors paying a larger fee, both fees to be fixed by consent of the County Council ? | |
| Yes | - - - - - | 330 |
| No | - - - - - | 114 |
| Blank | - - - - - | 160 |
| 18. | Would the people of your neighborhood or county be likely to approve generally of such public and open game protection associations as are previously described ? | |
| Yes | - - - - - | 339 |
| No | - - - - - | 107 |
| Blank | - - - - - | 158 |
| 19. | Should the formation of close or exclusive Game and Fish Protection Associations, covering marshes by freehold, or lease, be encouraged or discouraged ? | |
| Yes | - - - - - | 223 |
| No | - - - - - | 270 |
| Blank | - - - - - | 111 |
| 20. | Do any of the farmers of your neighborhood feed Quails during the winter, or take any other means to keep up game on their lands ? | |
| Yes | - - - - - | 96 |
| No | - - - - - | 457 |
| Blank | - - - - - | 51 |

QUESTIONS RELATING TO ANIMALS OTHER THAN DEER, MOOSE, CARIBOU, ETC.

The questions prepared on this subject by your Commissioners were answered
by 578 witnesses as follows :—

NAME.	OCCUPATION.	ADDRESS.	COUNTY.
Jno. Forde.....	Fur Trader.....	Schrieber.....	Algoma.
Thos. Frood.....	Farmer.....	Little Current.....	"
Thos. Penfold.....	Jailer.....	Port Arthur.....	"
Wm. LaRush.....	Fisherman.....	Kagawong.....	"
E. Rumley.....	Engineer.....	Lion's Head.....	Bruce
Augustus Smith.....	Brick Manufacturer.....	Port Elgin.....	"
Hirman M. Smith.....	Sawmiller.....	Southampton.....	"
The Bruce Peninsular Game Protection Association.....		Wiarton.....	"
Geo. Mair.....	Banker.....	Lucknow.....	"
Cecil Swale.....	Farmer.....	Wiarton.....	"
Joe Robinson.....	Merchant.....	".....	"
J. H. Garnier.....	Physician.....	Lucknow.....	"
C. E. Start.....	Solicitor.....	Tara.....	"
W. J. Topley.....	Photographer.....	Ottawa.....	Carleton.
W. W. Boucler.....	Veterinary Surgeon.....	South March.....	"
Geo. C. Wood.....	P. O. Department.....	Ottawa.....	"
P. A. McDougall.....	Physician.....	".....	"
A. H. Johnson.....	Farmer.....	Castleford.....	"
F. H. F. Mercer.....	Clerk.....	Ottawa.....	"
T. G. Carpenter.....	Agent.....	Arnprior.....	"
F. J. Vanderlip.....	Hotel-keeper.....	Ottawa.....	"
J. B. Spence.....		".....	"
G. C. Rainboth.....	Provincial Land Surveyor.....	Aylmer.....	"
H. N. Smith.....	Sergeant-at-Arms.....	Ottawa.....	"
Wm. P. Lett.....	City Clerk.....	".....	"
John T. G. White.....	Lumberman.....	".....	"
John Stewart.....	Provincial Land Surveyor.....	".....	"
Wm. O'Leary.....	Farmer.....	Loretto.....	Cardwell.
H. H. Burnham.....	Gentleman.....	Port Hope.....	Durham.
Job Dickinson.....	Farmer.....	Zion.....	"
W. Fry.....		Frazerville.....	"
Geo. M. Furby.....	Manager.....	Port Hope.....	"
Wm. McIntosh.....	C. P. R. Agent.....	Newcastle.....	"
J. C. Fox.....	Pres. Orangeville Gun Club.....	Orangeville.....	Dufferin.
A. White.....	Miller.....	Orwell.....	Elgin.
Alfred Zavity.....	Carpenter.....	Sparta.....	"
Geo. Cheyne.....	Secy. Kingston Gun Club.....	Windsor.....	Essex.
J. H. Mackelem.....	Farmer.....	Tilbury Centre.....	"
Joe Winter.....	Pork Packer.....	Windsor.....	"
Geo. Goodman.....	Builder.....	".....	"
Dan. G. Revell.....	Conductor.....	".....	"
Wm. Donaldson.....	Painter.....	".....	"
C. L. Paré.....	Manufacturer.....	".....	"
R. Vigneaux.....	Carpenter.....	".....	"
Albert Drouillard.....	Customs Officer.....	".....	"
C. F. Cornetet.....		Bell River.....	"
P. C. Ponting.....		Windsor.....	"
G. E. Pettypiece.....	Prop. Windsor Truck Co.....	McGregor.....	"
John G. Gordon.....	Farmer.....	Parham.....	Frontenac.
R. Clow.....	".....	".....	"
Wm. A. Wagar.....	".....	".....	"
M. Cronk.....	".....	".....	"
H. Stratford.....	Taxidermist.....	Kingston.....	"
John Legatt.....	Agent.....	Owen Sound.....	Grey.
E. G. Rogers.....	Vet. Surgeon.....	Meaford.....	"
C. I. Bagar.....	Farmer.....	Sim.....	Hastings.
E. B. Fralick.....	Judge.....	Belleville.....	"
E. N. Leavens.....	".....	".....	"
Fred Root.....	".....	".....	"
J. N. Pringle.....	".....	".....	"
J. W. Loudon.....	".....	".....	"

QUESTIONS RELATING TO ANIMALS—Continued.

NAME.	OCCUPATION.	ADDRESS.	COUNTY.
Geo. Twining		Belleville.	Hastings.
J. C. George	Postmaster	Bancroft	"
Geo. Pattison	Farmer	Coe Hill Mines	"
Thos. J. Moore	"	St. Ola	"
Wm. Elliott	"	Coe Hill	"
Thos. Nugent	"	Nugent	"
Henry Bird	"	The Ridge	"
John Campbell	"	Havergal	"
Peter Wright	"	St. Ola	"
R. S. Tivey	Merchant	Coe Hill	"
Wm. S. Clark	Farmer	Holloway	"
Joseph Stoneburg	Policeman	Belleville	"
Willett Turner	Farmer	Faraday	"
Bidwell Sine	"	Harold	"
Henry Dennison	"	Purdy	"
Fred Lacey	"	Beechmount	"
Geo. McAllister	"	Boulter	"
Ed. Johnson	Rushranger	Bancroft	"
Henry Foster	Farmer	Faraday	"
R. C. Fair	Tin Merchant	Bancroft	"
D. R. Leavens	Gentleman	Belleville	"
Stephen Badgley		Stirling	"
Gilbert Holmes	Farmer	St. Ola	"
T. B. Watt	"	Coe Hill	"
John Bell	"	Frankford	"
Jas. T. Bell	County Clerk	Belleville	"
A. G. Allison	Despatcher G. T. R.	"	"
Wm. H. Sweet	Farmer	Bancroft	"
Robt. Hewton	"	Faraday	"
Fred Mullott	Hotel-keeper	Bancroft	"
Jas. W. Ham	Farmer	St. Ola	"
Jas. Nosworthy	Contractor	Belleville	"
E. Lockman	Guide	Dorset	Haliburton.
Arch. McCall	Farmer	Gooderham	"
R. Davis	Shoemaker	Minden	"
Thos. Scott	Farmer	Kennaway	"
W. J. Austin	Merchant	Haliburton	"
C. S. Austin	Gentleman	"	"
Geo. Bemmister	Civil Engineer	"	"
Jas. Worley	Cabinetmaker	"	"
Jno. Reid	Carpenter	"	"
Jno. Lucas	Hotel-keeper	"	"
Eldridge Leith	Merchant	"	"
P. O'Connor	Trapper	"	"
C. R. Stewart	Gentleman	"	"
Joe Kellett	Hotel-keeper	"	"
Jos. Paul	Butcher	"	"
S. Dawson	Farmer	"	"
Fred Freeman	Merchant	"	"
L. M. Neily	Shoemaker	"	"
Geo. Gregory	Farmer	Wicksteed	"
J. E. Holmes	Mail Contractor	Haliburton	"
Geo. Tutt	Guide	Dorset	"
Fred. Lowe		Dunnville	Haldimand.
Martin Green		"	"
John Green		"	"
Wm. McIndoe		"	"
Freeman Green		"	"
J. C. Eccles		"	"
Jas. Smith		"	"
Jas. Clifford		"	"
Wm. Lambier		"	"
Jas. Varderberg		"	"
Lewis Fox		"	"
Wm. G. Wismer	Blacksmith	S. Cayuga	"
Isaac G. Wismer	"	"	"
John Farrell	"	Cayuga	"
Joe Wilson	Farmer	Ash	Halton.

QUESTIONS RELATING TO ANIMALS—Continued.

NAME.	OCCUPATION.	ADDRESS.	COUNTY.
T. J. Wheeler.		Georgetown	Halton.
John Boyes	Farmer	Nelson	"
Caleb Lousley	"	Trafalgar	"
Albert Clements	"	"	"
Oscar Hood	"	Drumquin	"
John Pirie	Blacksmith	"	"
Wm. Panton	Editor	Milton	"
Geo. McCurly	Farmer	Nelson	"
Dan. McLaren	"	"	"
Peter McEwen		Leadbury	Huron.
Marshall Burk	Labourer	Blenheim	Kent.
T. P. Warner	Farmer	Guilds	"
I. B. Reynolds	Merchant	Rondeau	"
Stephen Russell	Farmer	Blenheim	"
J. A. McKellar	Presd. Ridgetown Gun Club	Ridgetown	"
H. A. Mallory	Secy.	"	"
P. D. Bates	Fisherman	"	"
T. B. Gillard	Banker	Wallaceburg	"
Wm. L. Cameron	Farmer	Harwich	"
W. B. Wells	Clerk	Chatham	"
John Mercer	Sheriff	"	"
Gordon Boles	Captain	"	"
J. L. Nicholls	Dentist	"	"
Jas. Thomas	Farmer	Raleigh	"
Wm. Crow	"	Dover	"
S. Homes	Merchant	Chatham	"
Abbott Wilcox	Farmer	Dover	"
G. A. Laver	Law Student	Chatham	"
David Wilson	Farmer	Harwich	"
Jas. McGarvin	"	"	"
P. McGarvin	"	Dover	"
Alex. Ducedre	"	"	"
Geo. Kime	"	"	"
Abraham Alexander	"	"	"
Wm. M. Cameron		Harwich	"
Chas. Eastlake	Merchant	Ridgetown	"
H. J. O'Lone	"	"	"
M. Massey	Farmer	Chatham	"
Jas. Kime	Veterinary Surgeon	"	"
E. Wheeler	Merchant	"	"
D. Smith	Farmer	"	"
Albert Williams	"	Raleigh	"
A. Alexander, Jr.	"	Dover	"
Jas. Rankin	"	"	"
T. H. Nelson	Bailiff	Chatham	"
Jas. Hamilton	Fisherman	Jeanetts Creek	"
John Houston	Farmer	Harwich	"
Henry Dagneau	Hardware Merchant	Chatham	"
H. A. Crow	Farmer	Raleigh	"
W. A. Campbell	Clerk Co. Court	Chatham	"
Wm. Weldon	"	Morpeth	"
D. R. Watson	Caretaker	"	"
Samuel Burk	Farmer	Blenheim	"
Wm. Mallory	"	Guilds	"
Francis Van De Bogart	Ranchman	Napinee	Lennox & Addington.
— Sills	Farmer	"	"
Jas. Huffman	Druggist	"	"
Chas. Glover	Carriagemaker	Carleton Place	Lanark.
Hiram McFadden	Engineer	"	"
Isaac Korry	Sawmill Proprietor	Maberley	"
Peter C. White	Shoemaker	Perth	"
Geo. Bradford	Caretaker	Almonte	"
Duncan Campbell	Tailor	"	"
G. H. Gilbert	Hairdresser	"	"
F. McEwan	Physician	Carleton Place	"
Jas. C. Armstrong	Dentist	Almonte	"
Jas. Paton	Gentleman	Beamsville	Lincoln.
Jas. Keyes		St. Catharines	"

QUESTIONS RELATING TO ANIMALS—Continued.

NAME.	OCCUPATION.	ADDRESS.	COUNTY.
S. D. Woodruff.		St. Catharines.	Lincoln.
Jos. Deacon.	Police Magistrate	Brockville	Leeds.
David S. Booth.	Contractor	"	"
A. F. Stagg	Butcher	"	"
Geo. Bucher.		"	"
A. Armstrong	Hotel-keeper	Athens.	"
J. K. Thomson.	Farmer	Rockport.	"
Wm. Wilson	"	"	"
H. T. Fitzsimmons	"	"	"
Ed. Senecal	Oarsman	"	"
Jas. Fitzpatrick	Mechanic	Brockville	"
Wm. Thomson	Writer	Saginaw.	Michigan, U. S. A.
H. J. King	Butcher	Gravenhurst.	Muskoka.
Henry Austin		Bardsville	"
Thos. Currie.		Bala	"
D. Gordon	Farmer	Magnetawan	"
D. Hough		Port Carling.	"
Richard Clarke.	Farmer	Port Sidney	"
John Cooper	Hunter.	Bracebridge	"
Singleton Brown.	Lumberman	"	"
Erastus Hanes.	Postmaster	Utterson	"
J. C. Haines	Hotel-keeper	"	"
Chas. Riley	Farmer	Milford Bay	"
Jas. Perry	"	Bracebridge	"
John Green	"	Bala	"
R. S. Cole	"	Dorset	"
Wm. Terry.	Settler	Vankoughnet	"
W. G. Stewart	Farmer	Bracebridge	"
Jas. Clarke.	"	Monsell	"
Harris Demara.	"	Baysville	"
W. J. Miller	"	Vankoughnet.	"
B. S. Beley.		Rosseau	"
T. J. Gouldie	Farmer	Dwight	"
John Teifer	"	Giska	"
Wm. Mortimer	"	Mortimer's Point	"
Thos. Burges	Sawmill Proprietor	Bala	"
T. E. J. Salmon	Farmer	Dwight	"
Joseph S. Wallis	General Merchant	Port Carling.	"
Joseph Clarke.	Merchant	Aspdin	"
John May	Farmer	Port Carling.	"
John Board	Proprietor.	Bala	"
John McLean	Farmer	Torance	"
Jas. Fowler	"	Seeley	"
S. J. White	"	Whiteside	"
Chas. White.	"	Glen Orchard	"
E. J. Brooks	Postmaster	Antioch	"
Wm. Jarvis	Purser	West Gravenhurst.	"
H. Spencer	Harnessmaker	McKellar	"
John Vankoughnet	Farmer	Falding	"
Henry Vankoughnet.	"	"	"
Ridley Appelby	Postmaster	Doe Lake	"
John Thom	Farmer	"	"
W. H. Green	Hunter	Grassmere.	"
A. H. Campbell, Jr.	Manager Muskoka Mills.	Muskoka	"
Frank G. Pokorney.	Trapper and Guide	Huntsville	"
Alfred Hunt	Banker	Bracebridge	"
James Boyer	Clerk	"	"
J. C. Davidson	"	"	"
Jos. Ripkie	Stonemason	"	"
John A. Dale	Miller.	Lake of Bays	"
Robt. Robinson.	Tailor	Bracebridge	"
Chas. E. Mawdsley	Clerk	"	"
Hector McGinnis	"	"	"
James Hall.	Farmer	Stephenson	"
John Wasdell	"	Bracebridge	"
Jas. Hilliman	Tinsmith	"	"
E. F. Stephenson.	Journalist	"	"
Frank Kent	Veterinary Surgeon	"	"

QUESTIONS RELATING TO ANIMALS—*Continued.*

NAME.	OCCUPATION.	ADDRESS.	COUNTY.
C. Henderson	Bushranger	Bracebridge	Muskoka,
Christopher Sawyer	Guide	Dorset	"
N. H. Beemer	Physician	London	Middlesex.
John Pring	Hatter	"	"
F. L. Trebilcock	Jeweller	"	"
E. R. Tammon	Barrister	"	"
M. J. Kemp	Banker	"	"
H. A. Nicholson	"	"	"
H. A. Stevenson	Med. Student	"	"
John Burns	"	"	"
E. A. Cleghorn	Wholesale Grocer	"	"
L. McDonald	Dentist	"	"
W. C. Gill	Registrar	"	"
W. T. Williams	Chief Police	"	"
E. A. Sayer	Barrister	"	"
C. W. Davis	Hotel-keeper	Temnech House	"
Wm. Avey	"	Avey House	"
T. J. Hammond	"	"	"
J. S. Niven	"	"	"
J. H. Fraser	"	"	"
Wm. Woodruff	"	"	"
W. T. Strong	London Gun Club	London	"
H. S. Blackburn		"	"
W. A. Gill		"	"
Geo. Gibbons		"	"
W. H. Allison	Train Despatcher	"	"
Duncan Johnson	Teacher	Wardsville	"
J. M. Salmon	Physician	Simcoe	Norfolk.
S. M. Sovergeen	"	"	"
Jas. Duncan	"	Forestville	"
W. H. Anderson	"	Normanvale	"
Ed. Parker	"	"	"
W. F. Nickerson	"	"	"
Wm. E. Tisdale	"	Simcoe	"
H. H. Groff	"	"	"
Jno. Matthews	"	"	"
J. W. Ryerson	"	"	"
J. Lorne Campbell	"	"	"
C. C. Rapelje	Clerk County Court	"	"
W. J. McInnis	Physician	Vittoria	"
Jos. T. Carson	Teacher	Simcoe	"
David Overall	Wood Ranger	Sudbury	Nipissing.
Chas. Legris	Hotel-keeper	Nosbonsing	"
Frank M. Comstock	Principal	Leroy, Genesee Co.	New York, U. S. A.
T. J. Nimmo	Farmer	Bensfort	Northumberland.
J. H. McMaster	Mariner	Brighton	"
J. W. Dinwoodie	Contracter	Campbellford	"
R. H. Bonnycastle	Farmer	"	"
T. C. Sockwood	Postmaster	Brighton	"
C. Montgomery	Farmer	Hilton	"
F. Bonnycastle	"	Campbellford	"
Fred Peake	"	"	"
E. Moore	Salesman	Uxbridge	Ontario.
John Hammon	Hotel	Welland	"
A. Lawrie	Merchant	Port Dover	"
J. H. Brickwood	Rodmaker	Kingston	"
A. McLean	Farmer	Seagrave	"
C. A. Paterson	Municipal Clerk	Beaverton	"
Albert Orchard	Farmer	Seagrave	"
J. P. Kirkwood	"	North Bay	"
John McRae	Merchant	Beaverton	"
Arthur Miller	Sportsman	Seagrave	"
D. McCall	Real Estate Agent	Uxbridge	"
H. Lestcott	Merchant	Beaverton	"
T. Cuthbertson	Architect	Woodstock	Oxford.
John Cowan	Farmer	Bright	"
A. W. Gissing	Druggist	Princeton	"
Robt. McLean	Farmer	Innerkip	"

QUESTIONS RELATING TO ANIMALS—*Continued.*

NAME.	OCCUPATION.	ADDRESS.	COUNTY.
James Borland	Farmer	Innerkip	Oxford.
Wm. Hersie	"	Princeton	"
Wm. Pearce	Postmaster	Sprucedale	Parry Sound.
C. W. Burns, Jr	Manufacturer	South River	"
Thos. F. Carr	Farmer	Trout Creek	"
John Ibbotson	"	Restoule	"
John Clark	"	Restoule	"
Wm. Clark	"	"	"
B. F. Kean	Lumberman	Lake Joseph	"
Jno. Barnes	Farmer	"	"
C. D. Lawrence	"	Sprucedale	"
Thos. J. Paget	Teacher	Restoul	"
John Monteith	Hotel-keeper	Rosseau	"
C. W. Burns	Explorer	South River	"
Arthur Monteith	Hunter	Rosseau	"
H. N. Crossley	Farmer	"	"
Donald Ross	"	Turtle Lake	"
Dan. Starrat	"	Starrat	"
John Davie	"	Doe Lake	"
T. B. Purvis	Lumberman	Parry Sound	"
Thos. McGowan	Farmer	Featherstone	"
Jacob Jolifee	"	Monteith	"
Wm. Fry	"	"	"
Wm. Cargill	"	Foley	"
Alex. Watt	"	"	"
Frank Lafex	Farmer	Parry Sound	"
Ed. Taylor	Shoemaker	"	"
Wm. Ireland	Journalist	"	"
J. M. Anstey	Postmaster	"	"
J. R. Legatt	Watchmaker	"	"
W. L. Haight	Barrister	"	"
Wm. McConnell	Labourer	Burk's Falls	"
J. H. Bell	Bushranger	"	"
Jno. P. Bush	Hotel-keeper	Belfountain	Peel.
K. Chisholm	Accountant	Brampton	"
Wm. McFarlane	Hotel-keeper	Young's Point	Peterboro'.
J. J. Welsh	Blacksmith	Apsley	"
Geo. S. Sproule	Photographer	Peterboro'	"
Alex. Bell	Physician	Lakefield	"
W. H. Casement	Merchant	"	"
John Lean	Farmer	Apsley	"
G. W. Coones	"	"	"
Thos. G. Eastland	Postmaster	"	"
J. D. Collins	"	Peterboro'	"
R. Tivey	"	"	"
Alex. Paterson	"	"	"
R. Watson	"	"	"
Samuel Ray	Tobacconist	"	"
L. G. Steele	"	Lakefield	"
J. Richardson	"	"	"
Wm. Brownscombe	"	Peterboro'	"
R. E. Wood	"	"	"
Geo. Cochrane	"	"	"
H. Winch	"	"	"
W. H. Buckhorn	"	"	"
F. J. Moore	"	"	"
Thos. F. Wallace	Stock Dealer	"	Prince Edward.
James Hart	Merchant	Demorestville	"
G. A. Farmer	Banker	Montreal	Quebec.
Xavier Plaunt	Farmer	Sebastapol	Renfrew.
Donald McLaren	"	Sandpoint	"
Xavier Plaunt, Jr	Hotel Clerk	Renfrew	"
John Park	Gentleman	Horton	"
S. O. Gorman	Constable	Renfrew	"
Joseph Beggs	Farmer	Pembroke	"
J. D. Deacon	Physician	"	"
David Barr	Gentleman	Renfrew	"
Alex. Parks	Farmer	Eganville	"

QUESTIONS RELATING TO ANIMALS—Continued.

NAME.	OCCUPATION.	ADDRESS.	COUNTY.
John Hunt.....	Farmer.....	Mount St. Patrick...	Renfrew.
Frank Byers.....	".....	Renfrew.....	"
Robert Cameron.....	".....	Horton.....	"
John McCrae.....	Gentleman.....	Renfrew.....	"
Jas. Craig.....	Barrister.....	Pembroke.....	"
Donald Sutherland.....	Farmer.....	Wicksburg.....	"
Geo. Carr.....	".....	Point Alexander.....	"
Richard Thomas.....	".....	Deacon.....	"
A. Hamilton, Jr.....	".....	Pembroke.....	"
Taylor Hamilton.....	".....	".....	"
J. J. Mangan.....	Merchant.....	".....	"
Wm. Maves.....	Trapper.....	".....	"
R. A. Graham.....	Bushranger.....	".....	"
A. Swezey.....	".....	Deux Rivieres.....	"
J. Brady.....	Forestranger.....	Renfrew.....	"
J. J. Gorman.....	Farmer.....	Esmonde.....	"
Geo. D. Bayne.....	Minister.....	Pembroke.....	"
Wm. Scott.....	Farmer.....	Renfrew.....	"
Geo. W. Kidd.....	".....	Pembroke.....	"
H. Jones.....	".....	Sunnidale Corners.....	Simcoe.
H. B. Nicol.....	Physician.....	Cookstown.....	"
A. Clements.....	Farmer.....	Sunnidale.....	"
Andrew McQuay.....	".....	".....	"
W. J. Martin.....	Agent.....	Hillsdale.....	"
D. Somerville.....	Farmer.....	Stayner.....	"
Thos. Millichamp.....	".....	Orillia.....	"
Alfred Morrow.....	Veterinary Surgeon.....	Minesing.....	"
Henry Fuller.....	Farmer.....	".....	"
Thos. Crosbie.....	".....	Lisle.....	"
Wilfred Seluicles.....	Storekeeper.....	Allandale.....	"
Geo. A. Jebb.....	Farmer.....	Cookstown.....	"
Wm. Carr.....	".....	Bala.....	"
Jas. Martin.....	Bailiff.....	Hillsdale.....	"
Gideon Strowthers.....	Lumberman.....	".....	"
John Gray, Jr.....	Merchant.....	Coldwater.....	"
John P. Secord.....	Superintendent.....	Orillia.....	"
John Hutton.....	Farmer.....	Hutton House.....	"
Ed. Bathie.....	".....	Cookstown.....	"
S. A. Whitaker.....	Druggist.....	Hill-dale.....	"
W. H. Soden.....	Harnessmaker.....	".....	"
R. Wade.....	Gentleman.....	Orillia.....	"
Geo. Strathern.....	Jeweller.....	Midland.....	"
F. J. Hammell.....	Veterinary Surgeon.....	Tottenham.....	"
Jas. Cockburn.....	Farmer.....	Edgar.....	"
J. T. Harbourne.....	".....	Glen Orchard.....	"
R. Watson.....	".....	Stayner.....	"
Jesse Doner.....	".....	".....	"
Francis Lockhart.....	".....	".....	"
Wm. Watson.....	".....	".....	"
Geo. Ross.....	".....	".....	"
J. P. Kidd.....	Carpenter.....	Midland.....	"
J. Randolph Croft.....	".....	Barrie.....	"
Thos. Elliott.....	Barber.....	Beeton.....	"
Thos. McQuay.....	Merchant.....	Cookstown.....	"
J. O. Perry.....	Gentleman.....	Barrie.....	"
A. W. J. DeGrassi.....	Merchant.....	Orillia.....	"
Alfred Edgar.....	Physician.....	Lindsay.....	Victoria.
C. E. Bonnell.....	Lumberman.....	Bobcaygeon.....	"
E. Bottum.....	Physician.....	".....	"
John Lousley.....	Lockmaster.....	".....	"
W. J. Read.....	Blacksmith.....	".....	"
W. A. Goodman.....	Merchant.....	".....	"
G. Thornhill.....	".....	Lindsay.....	"
Jas. Dixon.....	Teamster.....	".....	"
W. J. Reid.....	Provincial Land Surveyor.....	Fenelon Falls.....	"
W. T. C. Boyd.....	Merchant.....	Bobcaygeon.....	"
A. E. Bottum.....	".....	".....	"
Jno. Sedgewick.....	Farmer.....	Snowden.....	"

QUESTIONS RELATING TO ANIMALS—*Continued.*

NAME.	OCCUPATION.	ADDRESS.	COUNTY.
Geo. Whistle.....	Butcher.....	Fenelon Falls.....	Victoria.
E. R. Edwards.....	Livery Stable-keeper.....	".....	"
A. Stevens.....	Miller.....	".....	"
Franklin Crandell.....	Steamboat Captain.....	Lindsay.....	"
Wm. McCamus.....	Physician.....	Bobcaygeon.....	"
Alfred Stephens.....	Wood Ranger.....	Fenelon Falls.....	"
H. R. Herriman.....	Lumberman.....	Lindsay.....	"
Thos. Walters.....	Mayor.....	".....	"
Captain Rose.....	".....	".....	"
Alex. Ross.....	".....	".....	"
Jonathan Ellis.....	".....	".....	"
Wm. Thorndyke.....	".....	".....	"
Wm. Needler.....	Mill Owner.....	".....	"
Redinan McGrath.....	Carpenter.....	".....	"
W. H. Bottum.....	Steamboat Captain.....	Bobcaygeon.....	"
Wm. Gidley.....	Superintendent Mill.....	".....	"
Geo. Beck.....	Forestranger.....	".....	"
J. G. Edwards.....	Hardware Merchant.....	Lindsay.....	"
E. C. Hood.....	Physician.....	".....	"
Thos. Fee.....	".....	".....	"
Chas. Spillisbury.....	".....	".....	"
R. H. Hopkins.....	".....	".....	"
J. Wallace.....	".....	".....	"
— Woods.....	Physician.....	Kirkfield.....	"
Jas. Wetherup.....	Dealer in Music'l Inst'mnts.....	Lindsay.....	"
Alex. Murray.....	Farmer.....	Kinmount.....	"
Jas. King.....	Mechanic.....	Kirkfield.....	"
Wm. Kennedy.....	Contractor.....	Bobcaygeon.....	"
C. E. Tiers.....	Agent.....	".....	"
H. L. Tribe.....	Farmer.....	Vankoughnet.....	"
N. B. Tribe.....	".....	".....	"
Chas. Gunsoles.....	Saddler.....	Bobcaygeon.....	"
S. Armitage.....	Farmer.....	Cambray.....	"
Jas. Wells.....	Carpenter.....	".....	"
J. Simpson.....	Physician.....	Lindsay.....	"
A. Knowlson.....	".....	".....	"
J. Finegan.....	".....	".....	"
W. J. Davis.....	".....	".....	"
Henry Cohan.....	".....	".....	"
Fremont Crandell.....	".....	".....	"
Joseph Littel.....	".....	".....	"
Wm. Mulcahy.....	".....	".....	"
B. Bryan.....	".....	".....	"
F. Minnis.....	Book-keeper.....	Bobcaygeon.....	"
Scott & Sadler.....	Hotel-keepers.....	Kinmount.....	"
W. F. Richie.....	Postmaster.....	Gelert.....	"
John Kinnear.....	Miller.....	Lindsay.....	"
Jas. Purdy.....	Farmer.....	Bobcaygeon.....	"
Robt. Hayes.....	".....	".....	"
T. L. Stephens.....	President Wild Fowlers Gun Club.....	Hamilton.....	Wentworth.
E. V. Spencer.....	Vice-President Wild Fowlers Gun Club.....	".....	"
Andrew Murdoch.....	Agent.....	".....	"
Andrew Ross.....	Commission Merchant.....	".....	"
J. J. Steele.....	".....	".....	"
R. Æ. Kennedy.....	Journalist.....	".....	"
J. I. McKenzie.....	Inspector.....	".....	"
A. E. Malloch.....	Physician.....	".....	"
J. S. Hendrie.....	Contractor.....	".....	"
Albert Smyth.....	".....	".....	"
John Smith.....	Agent.....	".....	"
Jas. Crooks.....	Hotel-keeper.....	".....	"
Thos. Hutchinson.....	Engineer.....	".....	"
E. Tinsley.....	".....	".....	"
Louis Snider.....	Agent.....	Binbrook.....	"
J. O. McGregor.....	Physician.....	Waterdown.....	"
A. Bowman.....	Gentleman.....	Hamilton.....	"

QUESTIONS RELATING TO ANIMALS—*Concluded.*

NAME.	OCCUPATION.	ADDRESS.	COUNTY.
T. Dalton		Hamilton	Wentworth.
S. Joyce		"	"
Wm. Payne		"	"
David Maddocks	Iron Finisher	"	"
Geo. M. Hendrie		"	"
Edward Dalton	Farmer	"	"
C. Mitchell	Bee-keeper	Molsworth	Wellington.
A. R. Woodyatt	Manufacturer	Guelph	"
J. Gibbs	Finisher	"	"
J. T. Garrett	Tailor	Wellington	"
W. Pettit	Grocer	"	"
A. L. Wilson	Gentleman	"	"
C. C. Spencer	"	Rose Hall	"
Robt. Aitken	Farmer	Speedside	"
G. A. Richardson	Sec'y. Guelph Gun Club	Guelph	"
S. Duffield	Farmer	Eramosa	"
A. C. Chadwick	Judge	Guelph	"
R. Webster		"	"
J. C. Hull	Merchant	Falls View	Welland.
Jas. Booth		"	"
F. T. Booth		"	"
Jos. Garner	Farmer	Fenwick	"
John Hammon	Hotel-keeper	Welland	"
Wm. J. Middleton	"	Toronto	York.
H. D. Weaver	Student	"	"
S. J. Stammers	Banker	"	"
H. J. Maughan	Insurance Agent	"	"
Rodney Wilson	Farmer	Sharon	"
J. F. W. Ross	Pres't. Ochtwan Sport. Club	Toronto	"
J. B. Henderson	Sec'y. " " " "	"	"
Richard Wells	Hotel-keeper	Aurora	"
Chas. Terry	Dentist	Newmarket	"
Robt. Kilgour	Manufacturer	Toronto	"
S. Scott	Physician	Newmarket	"
J. W. Mencke		Toronto	"
R. H. Beatty	Merchant	"	"
W. C. Matthews	Manager	"	"
John Fisher	Builder	Eglington	"
The Magnatawan Sporting Club		Parkdale	"
W. R. Bassett	Farmer	Pine Orchard	"
W. H. McConnell	Druggist	Toronto	"
S. R. Clarke	Barrister	"	"
R. W. Gownlock	Commercial Traveller	"	"

 ONTARIO FISH AND GAME COMMISSION.

 QUESTIONS RELATING TO ANIMALS OTHER THAN DEER, MOOSE,
CARIBOU, ETC.

These questions were answered by the 578 witnesses before-named, as follows :—

HARES AND RABBITS.

Present close season, 1st March to 1st September.

1.	Is this close season properly set ?	
	Yes	349
	No	87
	Blank	142
2.	If not, what change should be made ?	
	No change	140
	Blank	338
	January to September	32
	January to October	6
	February to September	29
	March to November	3
	May to September	1
	September to December	5
	October to November	1
	In favor of no close season	22
	October to December	1
3.	What are your reasons for foregoing answer ?	
	Fur of little value after March	32
	Hares are too numerous now	3
	Present season too long	7
	Present season interferes with breeding season	22
	Hares are becoming extinct	7
	Blank	507
4.	Should snaring or trapping be allowed ?	
	Yes	212
	No	231
	Blank	135

5. If not, why not?

Those who say yes think that they should be allowed to take or kill, as they please. Those who object to the snaring say that it interferes with the legitimate sport of the sportsman, and also that it often kills other game out of season.

6. Should black and grey squirrels be protected?

Yes	-	-	-	-	-	-	300
No	-	-	-	-	-	-	110
Blank	-	-	-	-	-	-	168

7. If so, during what season?

January to May	-	-	-	-	-	7
January to September	-	-	-	-	-	31
January to October	-	-	-	-	-	28
February to October	-	-	-	-	-	28
March to September	-	-	-	-	-	23
April to September	-	-	-	-	-	1
May to October	-	-	-	-	-	1
September to December	-	-	-	-	-	6
Breeding season	-	-	-	-	-	232
For 5 years	-	-	-	-	-	23
Blank	-	-	-	-	-	198

Fur Bearing Animals.

BEAVER, MINK, MUSKRAT, SABLE, MARTEN, OTTER, FISHER.

8. Should the shooting of these animals in November, December or any other season be allowed?

Yes	-	-	-	-	-	318
No	-	-	-	-	-	117
Blank	-	-	-	-	-	143

9. What are your reasons for foregoing reply?

Some of the witnesses think that one way of killing is as good as another, and do not see any harm in shooting these animals. Others think that shooting destroys the fur; and others are of the opinion that the Beaver, Otter, Mink and Fisher should be protected for from five to ten years.

- | | | | |
|-------|--|----------------------|-----|
| 10. | Should the trapping season, at present from 1st November to 1st May, be shortened? | | |
| Yes | - | - | 208 |
| No | - | - | 204 |
| Blank | - | - | 166 |
| 11. | If so, how? and why? | | |
| | Trapping season should be | January to March | 7 |
| | " | January to May | 3 |
| | " | January to November | 4 |
| | " | October to January | 8 |
| | " | October to February | 3 |
| | " | October to May | 1 |
| | " | November to February | 3 |
| | " | November to April | 107 |
| | " | November to March | 17 |
| | " | December to April | 8 |
| | Prohibit for five years | - | 23 |
| | Prohibit for 10 years | - | 4 |
| | Blank | - | 349 |
| | Reasons given for changing season: | | |
| | Present season interferes with breeding | - | 2 |
| | Water is frozen up to end of March | - | 2 |
| | Fur is poor in April | - | 7 |
| | Animals are now caught too young | - | 4 |
| | Animals are becoming scarcer | - | 15 |
| | Fur is not good in fall | - | 1 |
| | Fur is not prime until November | - | 10 |

Destructive Animals.

WOLVES.

- | | | |
|---|--|-----|
| 12. | Every County Treasurer is now obliged to pay \$6.00 bounty for every Wolf killed in his county, or within one mile of a settlement in his county. Do you approve of this ? | |
| Yes | - - - - - | 509 |
| No | - - - - - | 17 |
| Blank | - - - - - | 52 |
| 13. | Should the bounty be increased, reduced or abolished ? | |
| In favour of increase without saying how much | - - | 177 |
| Abolish | - - - - - | 12 |

	Should not be increased - - - - -	112
	In favour of increase to \$50 - - - - -	2
	In favour of increase to \$12 - - - - -	47
	In favour of increase to \$10 - - - - -	90
	Blank - - - - -	138
14.	Should some arrangements for bounties on Wolf killing in unorganized districts be made ?	
	Yes - - - - -	441
	No - - - - -	18
	Blank - - - - -	119
15.	What further suggestions have you to make in the matter of Wolf bounties ?	
	<i>Answers to Nos. 13 and 14 cover this.</i>	

FOXES AND OTHER VERMIN.

16.	Should a bounty be given for the destruction of Foxes ?	
	Yes - - - - -	263
	No - - - - -	254
	Blank - - - - -	61
17.	If so, why, and to what amount ?	
	25 cents each - - - - -	6
	50 " - - - - -	66
	\$1 - - - - -	170
	\$2 - - - - -	40
	\$5 - - - - -	3
	\$50 - - - - -	4
	Blank - - - - -	289
	<i>Those who favour a bounty assert that the fox is very destructive to young game, and a great nuisance to the farmers generally.</i>	
18.	Should bounties be given for the destruction of Owls, Mink, Weasels and Hawks ?	
	Yes - - - - -	142
	No - - - - -	233
	Blank - - - - -	189
	Weasel, Hawk and Owl only - - - - -	14
19.	If so, why, and to what amount ?	
	\$50 per head - - - - -	3
	\$10 - - - - -	3
	\$2 - - - - -	1

\$2 each for Owls	-	-	-	-	-	-	1
\$2 each for Hawks	-	-	-	-	-	-	1
\$1 each for Mink	-	-	-	-	-	-	1
\$1 per head	-	-	-	-	-	-	7
50 cents per head	-	-	-	-	-	-	46
50 cents each for Weasel	-	-	-	-	-	-	1
25 cents per head	-	-	-	-	-	-	55
25 cents each for Owl and Hawk	-	-	-	-	-	-	4
10 cents per head	-	-	-	-	-	-	9
5 cents per head	-	-	-	-	-	-	2
Blank	-	-	-	-	-	-	444

20. What other vermin destructive to game or fish should be, if possible, destroyed ?

Not necessary to answer here, as witnesses have mentioned the names of every bird and animal that is to be found in the Province from the Sparrow to the Beaver.

SPECIAL QUESTIONS TO HOTEL-KEEPERS AND STORE-KEEPERS, IN SPORTING LOCALITIES.

These special questions were answered by 10 persons as follows :—

NAME.	OCCUPATION.	ADDRESS.	COUNTY.
Leon Drew.	Hotel-keeper	Lakefield.	Peterborough.
T. J. Wright	Telegraph Agent	Pembroke	Renfrew.
J. Reid	Hotel-keeper	Bobcaygeon	Victoria.
R. Gibson	Merchant	Pembroke	Renfrew.
A. Dunlop	"	"	"
J. J. Jones	"	"	"
E. Kinmount	Hotel-keeper	Kinmount	Victoria.
D. Chapinam	Merchant	Pembroke	Renfrew.
J. A. Lucas	Hotel-keeper	Haliburton	Haliburton.
W. Caldwell.	Grain Merchant	"	"

These special questions were answered by the 10 witnesses before-named as follows :—

- | | | |
|----|---|----|
| 1. | Do you do much business with campers, sportsmen and anglers ? | |
| | Yes | 8 |
| | No | 2 |
| 2. | Would this business be improved if fish and game were protected and multiplied in your localities ? | |
| | Yes | 10 |
| 3. | Do summer parties often destroy deer ? | |
| | Yes | 1 |
| | No | 9 |
| 4. | Are the close seasons for game and fish generally respected in your neighborhood ? | |
| | No | 9 |
| | Yes | 1 |
| 5. | If not, who are the principal offenders ? | |
| | None | 1 |
| | Settlers, pothunters campers and lumbermen | 9 |

SPECIAL QUESTIONS FOR MANAGERS OR SUPERVISORS OF RAILWAY AND STEAMBOAT LINES.

These special questions were answered by 5 persons as follows:—

NAME.	OCCUPATION.	ADDRESS.	COUNTY.
M. C. Dickson	District Passenger, G. T. R.	Toronto	Whitby.
T. D. Sherdan	" ..	Buffalo	New York.
D. S. Wagstaff	" ..	Detroit	Michigan.
D. D. Pearse	" ..	Montreal	Quebec.
G. Oswell	" ..	Ogdensburg	New York.

ONTARIO FISH AND GAME COMMISSION.

SPECIAL QUESTIONS TO MANAGERS OR OTHER SUPERVISORS OF RAILWAY AND STEAMBOAT LINES.

These special questions were answered by the 5 witnesses before-named as follows:—

1. Does your line do much traffic in sporting, camping and angling passengers ?

Yes	- - - - -	4
No	- - - - -	1
2. Upon what routes ? If by steamboats name them ?
Not necessary to answer here, replies merely give various lines running through the Province.
3. Give, if possible, an approximate estimate of the value of the passenger, camping, and other traffic arising from shooting and fishing sport ?

Blank	- - - - -	4
-------	-----------	---

The only answer given comes from Mr. D. S. Wagstaff, G. T. Railway, Detroit, who estimates the sporting traffic over his division to be almost \$10,000 per year.
4. Would the preservation and multiplication of game and fish probably improve the traffic above-mentioned ?

Yes	- - - - -	3
Blank	- - - - -	2

N. B.—Mr. Wagstaff answers in the affirmative, but says that the issue of licenses would greatly hurt the railway's business.
5. Some American railways give free transportation to fish fry from State hatcheries, and otherwise assist Game Wardens or protectors. Would your line probably act with similar liberality ?

This very important question was left unanswered by all the witnesses.
6. Would you object to allowing your Conductors or Pursers on sporting routes to act on behalf of the Government in issuing permits for licenses to shoot or fish, if such licenses here required by law ?

No answers by any of the witnesses.

SPECIAL QUESTIONS FOR CONDUCTORS AND PURSERS.

These special questions were answered by 15 persons as follows :—

NAME.	OCCUPATION.	ADDRESS.	COUNTY.
H. Moe	Purser, "City of Middlesex."	Collingwood	Simcoe.
John W. Diamant	" Str. " Esterion "	Bobcaygeon	Victoria.
R. Duggan	Steamboat Captain	Pembroke	Renfrew.
J. M. Collins	Station Agent	Coe Hill.	Hastings.
J. Schuowith	Farmer	Kinmount	Victoria.
Wm. Pynn	Conductor	Haliburton	Haliburton.
Ben. H. Eckert	Station Agent	Ormsby	Hastings.
J. Lottridge	Conductor	Midland	Simcoe.
M. Kerr	Station Agent	Madoc	Hastings.
C. P. Fisher	Agent G. T. R	Waubanshene	Simcoe.
R. Tivey	Bridge Inspector	Peterboro'	Peterboro'.
J. Jarvis	Purser, Str. " Kinogha "	Gravenhurst	Muskoka.
T. J. Wright	Ticket Agent	Pembroke	Renfrew.
Capt. McAphin	Capt., Str. " Oriole "	Leg Lake	Muskoka.
J. A. Thibodeau	Manager, Forwarding Co	Pembroke	Renfrew.

ONTARIO FISH AND GAME COMMISSION.

SPECIAL QUESTIONS TO CONDUCTORS, PURSERS, ETC.

These special questions were answered by the 15 witnesses before-named as follows :—

- | | | |
|-----|---|----|
| 1. | Do you travel on a sporting or angling division or line ? | |
| | Yes - - - - - - - | 15 |
| (b) | Not necessary to answer further, as replies only specify the various steamboat routes and railway through the Province. | |
| 2. | Do sportsmen, campers and anglers form a considerable portion of the passenger traffic in summer and fall ? | |
| | Yes - - - - - - - | 15 |
| 3. | Do deer hunters usually bring hounds with them ? | |
| | Yes - - - - - - - | 15 |
| 4. | Would you, if your manager consented, be willing to act on behalf of the Government in issuing licenses or permits for fishing and shooting ? | |
| | No - - - - - - - | 2 |
| | Yes - - - - - - - | 13 |
| 5. | Could you probably give efficient service in these respects ? | |
| | No - - - - - - - | 2 |
| | Yes - - - - - - - | 13 |
| 6. | What are your reasons for foregoing answer ? | |
| | Those who answer in the affirmative say that they know the travelling sportsmen so well that they could probably render valuable help. | |
-

SPECIAL QUESTIONS FOR DEALERS IN FISH AND GAME.

These special questions were answered by 11 persons as follows:—

NAME.	OCCUPATIONS.	ADDRESS.	COUNTY.
Wm. Baker	Game Dealer	Hamilton	Wentworth.
Wm. Morton.....	"	"	"
Wm. Drayton	"	"	"
E. Martin.....	Merchant	Pembroke	Renfrew.
J. J. Mayers	"	"	"
J. Robinson	"	Bobcaygeon	Victoria.
Thos. Metcalf	"	Pembroke	Renfrew.
Geo. Gale	Game Dealer	Brockville	Leeds.
Paul Derosia	"	"	"
J. B. Kemp	Grocer	Pembroke	Renfrew.
S. J. Fluke.....	"	"	"

ONTARIO FISH AND GAME COMMISSION.

SPECIAL QUESTIONS FOR DEALERS IN GAME, FISH, ETC.

These special questions were answered by the 11 witnesses before-named as follows:—

- | | | |
|----|---|----|
| 1. | Is game commonly offered to you before the season opens ? | |
| | Yes - - - - - - - - | 5 |
| | No - - - - - - - | 6 |
| 2. | Is all venison in prime condition when the shooting season begins ? | |
| | Yes - - - - - - - - | 6 |
| | No - - - - - - - | 5 |
| 3. | Are November bucks in prime condition for food ? | |
| | Yes - - - - - - - - | 6 |
| | No - - - - - - - | 3 |
| | Blank - - - - - - - | 2 |
| 4. | Are most of the deer that come to market shot through the neck, and probably while swimming ? | |
| | Yes - - - - - - - - | 8 |
| | No - - - - - - - | 3 |
| 5. | What price is usually paid for raw fawn, doe, and buckskins in good condition ? | |
| | \$1 - - - - - - - | 3 |
| | 75 cents to \$1.25 - - - - - - | 1 |
| | \$1.25 to \$2.50 - - - - - - | 5 |
| | \$1.25 to \$3 - - - - - - | 2 |
| 6. | What price for large buck heads ? | |
| | \$2 to \$3 - - - - - - | 5 |
| | \$2 to \$4 - - - - - - | 6 |
| 7. | Is there an active market for buckhorn ? | |
| | No - - - - - - - | 11 |
| 8. | Is there an active and increasing demand for game birds and fish ? | |
| | Yes - - - - - - - | 11 |

9. How do the following fish rank in order of their price?
 Speckled Trout, Salmon Trout, White Fish, Pickerel, Bass,
 Maskinonge, Pike, Perch, Herring, Eels, Sturgeon,
 Channel Catfish, Mudpouts?

Average answer gives following:—

1. Speckled Trout.
2. Salmon Trout.
3. White Fish.
4. Pickerel and Maskinonge.
5. Herring.
6. Perch.
7. Eels.
8. Sturgeon.

10. What sorts of game animals and birds, similar to Ontario
 sorts, are largely imported?

None	-	-	-	-	-	-	-	6
Quail, Prairie Chicken, Duck, Partridge, Snipe and Plover								5

11. Should the export of game birds, venison and Speckled
 Trout be forbidden?

Yes	-	-	-	-	-	-	-	10
No	-	-	-	-	-	-	-	1

12. Should importation of the same be forbidden?

Yes	-	-	-	-	-	-	-	6
No	-	-	-	-	-	-	-	5

13. If dealers in game were required to take a license at a
 small or nominal fee, would that help to prevent the
 illegal destruction and sale of game?

No	-	-	-	-	-	-	-	9
Yes	-	-	-	-	-	-	-	2

SPECIAL QUESTIONS FOR DEALERS IN GUNS, TACKLE, ETC.

These special questions were answered by 9 persons as follows :—

NAME.	OCCUPATION.	ADDRESS.	COUNTY.
J. W. Walker	Hardware Merchant	Belleville	Hastings
R. Hawthorn	"	Trenton	"
W. W. Chime	"	Belleville	"
Wm. Coats	Watchmaker	Brockville	Leeds
H. M. Green	Hardware Merchant	Ridgetown	Kent
G. W. Laver	"	Trenton	Hastings
G. G. Lafayette	Watchmaker	Brockville	Leeds
W. A. Brock	Gun Dealer	London	Middlesex
W. M. Freed	"	"	"

ONTARIO FISH AND GAME COMMISSION.

SPECIAL QUESTIONS FOR DEALERS IN GUNS, TACKLE, ETC.

These special questions were answered by the 9 witnesses before-named as follows :—

1. If owners of guns, rifles and pistols, other than those used for military purposes, were required to register their weapons and take out shooting licenses at a nominal fee, what would be the effect on your trade ?

It would diminish and curtail the trade	-	-	6
It would ruin our business	-	-	1
It would be most injurious	-	-	2

2. If gun and tackle dealers were supplied with such licenses and authorized to issue them on making sales, would the trade be affected ?

No	-	-	4
Yes	-	-	3
It would ruin the trade	-	-	2

3. Would the strict enforcement of the Game Laws benefit your trade by increasing the game and the amount of shooting ?

Yes	-	-	6
No	-	-	2
Blank	-	-	1

4. If gun licenses were necessary to game preservation, and if your trade would be improved by game preservation, would you be willing to assist in carrying out the game license system ?

Yes, if positively necessary	-	-	5
No	-	-	4

SPECIAL QUESTIONS FOR GUIDES.

These special questions were answered by 7 persons as follows :—

NAME.	OCCUPATION.	ADDRESS.	COUNTY.
D. Redner....	Hunter.....	Maple Lake	Haliburton.
E. P. Hoxie	Guide	Haliburton	"
Martin Green	"	Dunnville	Haldimand.
J. Green ...	"	"	"
G. Green	"	"	"
J. Heighs	"	"	"
P. O. Connell.....	"	Haliburton	Haliburton.

These special questions were answered by the 7 witnesses before-named as follows :—

- | | | |
|----|---|---|
| 1. | Where do you act as guide ? | |
| | Not necessary to answer here, as answers only give localities where witnesses live. | |
| 2. | What pay do you usually get ? | |
| | \$2 per day | 2 |
| | \$2 to \$3 per day | 4 |
| | \$4 per day and provide dogs and canoes | 1 |
| 3. | How many days of the year are you commonly employed as guide ? | |
| | About 20 days | 4 |
| | About 25 days | 1 |
| | About 30 days | 2 |
| 4. | How many other guides are there in your locality ? | |
| | Not necessary to answer here ; replies vary from 5 to 25. | |
| 5. | Do you furnish canoes and dogs ? | |
| | Yes | 6 |
| | Boats but not dogs | 1 |
| 6. | If so, what do you get for use of canoes per day ? | |
| | All the witnesses say 50 cents per day for each canoe. | |
| 7. | What for dogs per day ? | |
| | Blank | 4 |
| | 50 cents per day | 1 |
| | \$2.50 per day | 2 |

SPECIAL QUESTIONS FOR BOAT AND CANOE BUILDERS.

These special questions were answered by 2 witnesses as follows :—

NAME.	OCCUPATION.	ADDRESS.	COUNTY.
G. P. Crews	Boat-builder	Pembroke	Renfrew.
John Cockburn	“	“	“

ONTARIO FISH AND GAME COMMISSION.

SPECIAL QUESTIONS TO BOAT AND CANOE BUILDERS.

These special questions were answered by the 2 witnesses before-named as follows:—

1. Do you sell or rent many boats or canoes to campers,
sportsmen and anglers?
Yes - - - - - - - - 2

 2. Would the preservation and multiplication of game ani-
mals, birds and fish probably be beneficial to your
trade in making the Province more attractive to
sportsmen and campers generally?
Yes - - - - - - - - 2
-

The answers received by your Commissioners to the foregoing sets of questions sent out by them, and the evidence heard from witnesses who appeared before them to give evidence, point to a state of affairs, which, as far as the Game and Fish of the Province is concerned, is most alarming.

It would have been well, if the Commission which is now making its report, had been issued years ago.

On all sides, from every quarter, has been heard the same sickening tale of merciless, ruthless, and remorseless slaughter.

Where but a few years ago, game was plentiful, it is hardly now to be found, and there is great danger that, as in the case of the Buffalo, even those animals which have been so numerous as to be looked upon with contempt, will soon become extinct.

In many places where game animals formerly abounded, large cities stand to-day; the clearing up of the land, the cutting down of the forests, the introduction of railways, the ravages of the wolves, the indiscriminate hunting of the human assassin, and the use of dynamite and net, have all contributed to the general decrease of the game and fish of the land. This is to be regretted, and is indeed a deplorable state of affairs, not only from the sportsmen's but from an economic point of view.

The good which would undoubtedly accrue to the masses from a liberal supply of cheap game and fish food is now minimized to such an extent as to be almost unobservable.

What game is left now goes, either to grace the table of the rich, or to the neighbouring republic, where larger prices are obtained for it than can possibly be had in Canada.

The amount of money put in circulation annually, by sportsmen, is enormous, although your Commissioners regret that they have been quite unable to form even an approximate estimate of the amount so spent in the legitimate pursuit of fish and game.

It will be readily seen that the money paid out for powder, shot, fire-arms, fishing-rods and tackle, railway transport, hotel accommodation, camp supplies, and hire of guides and the many other incidentals necessary to the sportsman, amount yearly to a sum which is not easily guessed at, and there are many localities and many families in the Province, who depend chiefly on this source of revenue for their livelihood.

As the Game and Fish supply decreases year by year, the money put into circulation also decreases proportionately, and in inverse ratio if the Game were protected, the Province restocked as far as possible, and pains taken to preserve and propagate the supply, the community would benefit materially thereby.

Your Commissioners having therefore given the most careful attention to the matters presented for their consideration, and having weighed most carefully the evidence presented to them, keeping ever in mind that their duty was to recommend such measures as would conduce towards the preservation and protection of Game and Fish, even although such recommendations might give offence to some selfish men who call themselves sportsmen, beg to make the following recommendations:

RECOMMENDATIONS OF COMMISSIONERS.

DEER.

Your Commissioners find that the deer, whilst still found in comparatively large numbers in some portions of the Province are not nearly so plentiful as they were some years ago.

This is easily accounted for, the clearing up of the land, the improvements in modern fire-arms, the ravages of wolves, and the ceaseless and indiscriminate slaughter in and out of season, appear to have well nigh exterminated this noble animal. The extent to which yard-hunting and crust-hunting is practised is incredible; not only are the bucks killed for food purposes, but small fawns and does heavy with young are remorselessly butchered, either out of pure brutality or for the sake of the almost valueless skin.

It is generally admitted, that to distinguish between a buck and a doe, or a doe and a fawn, when the animal is running at full speed, and a momentary glimpse is only obtained, is a difficult matter, but your Commissioners desire to impress upon all true sportsmen the necessity of sparing the smaller and weaker animals as far as possible, even if the sacrifice should cause them the loss of a shot.

In some counties in the Province the deer are almost extinct, and your Commissioners recommend that deer killing be entirely prohibited for a period of five years in the counties south and west of the northern boundaries of the counties of Bruce, Grey and Simcoe, as far north as the Severn River and the eastern boundary of Ontario.

The use of hounds for the purpose of hunting deer has proved one of the most vexatious questions presented for the consideration of your Commissioners, and although the answers of the witnesses examined in regard to this subject, show a large preponderance in favour of the use of dogs, it must be remembered, as before pointed out, that many of the answers were given solely from selfish motives, and are wanting therefore in weight and accuracy.

It was also evident to your Commissioners during the course of their inquiries, that those hunters who have been accustomed to hunt with dogs and favour that mode, made a special endeavour to have their view of the case presented to your Commissioners, whilst those who objected to the use of hounds contented themselves for the most part with making individual protests, or by addressing letters privately to the different members of the Commission.

Your Commissioners are themselves evenly divided in opinion on this question, five being of opinion that dog hunting is neither injurious to the deer nor the cause of extermination, whilst the other five are of opinion that to the use of dogs is principally attributable the steadily growing scarcity, as well as the awful slaughter of the deer.

The still hunters who disapprove of the use of dogs assert that deer chased by dogs are rendered unfit for human food after the long chases to which they are

subjected ; that the deer are driven out of localities which they would otherwise inhabit ; that much loss of life is caused by the chasing of does heavy with young, and that the almost invariable method of killing dog-chased deer is by shooting them through the head whilst in the water, a procedure which is neither sportsmanslike nor clever.

Those, on the other hand, who believe in the use of dogs, assert that the still hunter's bullet too often wounds without killing the deer, allowing the animal to escape and die in agony in lonely places where it can never be found, and where the flesh is never recovered to be eaten. They assert further that the still-hunter does more damage single-handed, and kills more deer than any party of hunters could possibly do.

These sides of the question were so strongly put before your Commissioners, and your Commissioners themselves were so evenly divided in their opinion of the merits of the case that, after long and careful consideration, they have decided to recommend—

1st. That the present open season from 15th October to 20th November be shortened five days, so as to be from 15th October to 15th November.

2nd. That the hunting of deer with hounds shall only be lawful from 1st to 15th November inclusive in each and every year.

This, if adopted, will, it is thought, be found highly beneficial, inasmuch as it will shorten considerably the present open season, thus affording a better chance to the deer ; besides which the hunting of deer with hounds will stop with the end of the season.

Your Commissioners find that the illegal killing of deer is practised by all classes of the community, and the laws regulating the number of animals to be killed each season by each hunter and which is popularly known as the "party clause" is entirely and utterly disregarded. By sub-dividing into smaller parties, and by joining more than one party in a season, sportsmen are enabled easily to avoid the law in question and many more deer are therefore killed than the law allows.

Your Commissioners recommend therefore that the "party clause" be abolished and that instead thereof, sportsmen be allowed to kill two deer each per season, and no more.

With regard to the shooting of deer in Ontario by foreign sportsmen, your Commissioners have found a very strong feeling against allowing the continuance of this practice, nor is this feeling unreasonable, when it is borne in mind that the deer are annually becoming scarcer, and that there is a danger that few may be left in the near future to supply the wants of the home market.

On the other hand it must be remembered that foreign sportsmen put much money into circulation and very materially help the residents and business men in sporting localities, and your Commissioners have therefore to recommend that if it is not thought wise to entirely prohibit foreigners from killing deer in the Province, a permit should be obtained and a fee paid for the privilege.

Your Commissioners also unanimously and very strongly recommend that all dogs found running deer out of season should be allowed to be killed at sight.

Your Commissioners are of opinion that the wanton slaughter of deer could be very largely curtailed by the appointment of an efficient force of Game Wardens. At present the enforcement of the law is not the particular duty of any

particular person, and it is found very difficult for that reason to reach those who break the law. If the deer in Ontario are worth preserving they must be preserved thoroughly, and this should not be delayed for a single day.

The appointment of an efficient force of Game Wardens would be of incalculable benefit to the country, and go far towards protecting and preserving the Game and Fish of the whole Province.

It has been suggested to your Commissioners that a law ought to be passed allowing pioneer settlers to kill deer for their own family food at all seasons, but your Commissioners cannot recommend such a measure, as it would almost certainly lead to abuse and tend towards confusion.

MOOSE, ELK AND CARIBOU.

Your Commissioners strongly recommend that the protection of these animals be continued.

The evidence taken, points conclusively to the fact that the protection lately extended to this noble animal has had the effect of materially increasing its numbers, but illegal slaughter still continues.

The hunters who kill the moose to-day in Ontario do so principally for the sake of the flesh, or for the sake of gratifying their desire to kill large game.

Neither the skin nor the head can be openly disposed of or kept, and these are generally sunk with heavy weights into deep waters to prevent the possibility of detection, whilst the flesh of the slaughtered animal is eaten as a delicacy.

Your Commissioners recommend that special efforts should be made to continue the protection of this animal and to mete out strong punishment to the human assassins who continue in their efforts to exterminate it.

BIRDS.

Your Commissioners find that the supply of Game Birds is growing gradually less in the Province. The difference in the close seasons for the various birds, has unquestionably much to do with this, as many birds are shot out of season by hunters who are pursuing other game, which at the time may be lawfully shot.

The extent to which the Game Birds of the Province are being slaughtered for exportation to the United States of America is almost incredible. Boys are hired by stage-drivers, train hands, commission merchants and others, to bring in as large a supply as possible, and the extermination goes on incessantly, although the price paid for the birds brought in is often hardly enough to pay for the powder and shot used in their destruction. The American hotels and restaurants are liberally supplied with Canadian game, whilst in Ontario only those who are rich can afford the luxury of a game dinner.

Your Commissioners are unanimously of opinion that the exportation of all kinds of game from the Province should be prohibited.

Your Commissioners find that much game is sold out of season by game and fish dealers, under the pretence that it has been imported. Your Commissioners are therefore opposed to the unrestricted importation of game, unless it can be so marked or labelled at the Custom House as to be easily identified.

This method would go far towards stopping the sale of birds shot out of season, and your Commissioners recommend that the Dominion Government be memorialized on this subject as well as on that of the exportation of game.

Your Commissioners recommend that five days and no more be allowed to dealers for the sale of their stock of game after the close season begins. The time at present allowed is too long, and allows of game being received after the close season begins.

Your Commissioners recommend that the sale, or exposure for sale of Quail Snipe, Wild Turkey, Woodcock and Partridge be prohibited all over Ontario for a term of three years.

Your Commissioners are of opinion that the law which forbids the spring shooting of Ducks should be strongly enforced, but as to Geese and Swan there is no reason why these birds should not be shot in spring.

Your Commissioners are of opinion that duck-shooting from sail-boats and steam yachts should be strictly forbidden.

Your commissioners find that the destruction of Ducks in some sections of the Province, especially where private preserves are established, is enormous, and recommend that no individual sportsman be allowed to shoot more than twenty-five ducks in any one day.

Your Commissioners are of opinion that foreigners residing outside of Ontario should not be allowed to shoot birds in the Province except upon payment of a license fee.

Your Commissioners recommend that with a view to preventing the shooting of Game Birds and smaller animals in part of their close season, all shooting except Quail should begin on 15th September and end on 15th December.

The Quail season need not be interfered with, and can stand as at present.

In the matter of the protection of birds, the establishment of a force of Game Wardens would also be very beneficial, and the indiscriminate slaughter now complained of could be much curtailed.

Your Commissioners recommend that the burning of marshes, which interferes with the nesting of Game Birds and other animals should be strictly forbidden.

Your Commissioners recommend that the permits issued for so-called scientific purposes, should be strictly limited in number, and not given except under very stringent conditions, and to those who are known to be *bona fide* scientific men.

Your Commissioners recommend that the present Trespass Act be amended so that persons found trespassing on farms or other private property where game is preserved, should be liable to a heavy penalty.

Referring to Revised Statutes of Ontario, chap. 221, section 7, your Commissioners recommend that the words "and all other waterfowl" be struck out.

Your Commissioners recommend that shooting between sunset and sunrise should be strictly prohibited, as much damage is done to Partridges and other birds on moonlight nights by pot-hunters who, with the aid of their dogs disturb the birds and then shoot them in large numbers from beneath the trees.

Your Commissioners unanimously and very strongly recommend that the open shooting season should include the first and last days specified. At present many hunters shoot and otherwise destroy game after the close season commences, excusing themselves for so doing, by the plea that they were not sure as to the correct interpretation of the law.

Your Commissioners unanimously recommend that the Wild Turkey should be closely protected for a period of five years.

FISH.

Your Commissioners have to report that the subject of the protection and preservation of fish, has been the most difficult presented to them for consideration.

Owing to the fact that the Province has not at present the right to control all its waters, and as the Dominion and Provincial laws vary considerably, much confusion is found to exist.

The laws are not generally enforced, and although it appears that a few of the Fishery Inspectors, endeavour to discharge their duties faithfully, it is equally apparent that the majority of them, take little, if any pains to prohibit illegal fishing and to protect the valuable stock entrusted to their care.

The extent to which fishing is carried on in the close seasons is alarming, and the exposure of fish in the markets of the larger towns and cities of the Province during the close seasons is open and defiant.

The extent to which netting is carried on is also inconceivable and the spawning grounds are stripped year after year, until in many places where fish abounded formerly in large numbers, there is no yield now at all. If a force of Game Wardens was appointed, this matter could be vigorously looked into, and the slaughter and destruction could be very considerably lessened.

The value of the fish yield is enormous, and too much pains cannot be taken to preserve what should always be a cheap food supply for the masses.

Your Commissioners are of opinion that a Whitefish Hatchery, as well as a Trout Hatchery should be established in the Province by the Ontario Government. This would be both useful and popular, and would pay for itself over and over again.

The visit of your Commissioners to the trout hatchery of the State of Michigan abundantly satisfied them as to this.

A few years ago the streams of that State were depleted, and not a trout could be found therein; the same waters are now teeming with fish. The farmers and dwellers along the banks, readily assist in preserving them, and the Railway Companies furnish free transport for the Commissioner's car when fry is being sent from point to point. No pains are spared to restock the streams, and increase the supply of fish, and the State is now reaping the benefit of the wise outlay made in the first instance.

Your Commissioners found much to admire in the systematic course pursued by the Fish Commission in the State of Michigan, in regard to its work. Every lake and body of water in the State is regularly inspected at stated periods, the condition of the weather and water at the time of inspection are contained in the Inspectors' report; the depth of the water, its temperature, the condition of the bottom, the number and kind of fish taken, are all carefully noted, and the result is that when the waters come to be re-stocked, only such fish are put in as are supposed to be able to thrive there. The consequence being, that waste and loss is minimized, and much good accrues from the thorough and systematic labour.

Your Commissioners regret that they cannot make any special recommendations as to the close season for the various fish found in the Province. The evidence taken, points to the fact that nearly all the waters in the Province are more or less depleted.

Saw-dust, dynamite, improper fish-slides, indiscriminate netting, and the

cutting down of shade trees, have all done their deadly work, and to add to the general discontent, there is no reason to doubt that the seasons now set are not universally approved of.

The close season for one particular fish, in one particular district, appears to be perfectly unsuitable to the same kind of fish in another part of the same district. This is easily accounted for by the differentiation in the conditions of the waters, some being deeper and therefore colder than others, and some containing a lack of proper fish food.

Your Commissioners are of opinion that the only satisfactory way in which the fish seasons can be properly set is by the establishment of a permanent Game and Fish Commission, whose members will give the matter special and thorough study. This is a work which cannot be done in a day, and a vast work lies ahead of such a Commission, but it is a work which can be made immensely profitable for the Province, and which will have the hearty sympathy of all classes of the community.

Your Commissioners are of opinion that Pound nets should be entirely abolished in the waters of the Province, and that no Gill netting should be allowed except by special permission from the Game and Fish Commissioners.

Careful attention should also be given to the matter of winter spearing in land-locked waters. There are some waters in which no harm can possibly result from this pastime, besides which many fishermen depend entirely for their winter supply of food, on the fish taken in this manner. On the other hand, there are many bodies of water, in which this practice is most pernicious, and detrimental, and this is a matter which should receive very careful attention.

Your Commissioners desire to point out that many fish are destroyed by camping and fishing clubs, for the mere sake of making big catches, so that the number of fish taken are far in excess of what is required for food purposes. By such means as these, many of the waters of the Province are being depleted, and your Commissioners therefore recommend that a limit be placed upon the size or weight of the fish allowed to be taken. Unless some such step is taken, the indiscriminate slaughter which has been going on for years, will soon deplete the waters of the Province entirely.

In the meantime, pending the possible appointment of a permanent Commission, your Commissioners feel themselves quite unable to offer any suggestions as to close seasons, although they are of opinion that the present laws, for the reasons above given, are not satisfactory.

HARES OR RABBITS.

Your Commissioners are of opinion that these animals should only be killed from 15th September to 15th December, so that one general shooting season may be observed.

SQUIRRELS.

Your Commissioners recommend that squirrels should only be shot from 15th September to 15th December, in the proposed general shooting season. At present the slaughter of these animals is indiscriminate, and the Black Squirrel has almost disappeared from the Province.

FUR BEARING ANIMALS.

Your Commissioners find that the Beaver, Otter, and Fisher are growing very scarce in Ontario, and unanimously recommend that they be strictly protected for five years, during which none of these animals should be allowed to be taken or killed.

Your Commissioners are of opinion that the present trapping season should be shortened, one month, so as to end on 31st March instead of 30th April. The present season is too long, and interferes with the breeding season.

WOLVES.

Your Commissioners find that much harm is done to the Deer and larger game animals of the Province, by Wolves.

The trappers and hunters assert that the Wolf is an animal which can only be taken with great difficulty, and the bounty at present paid, is altogether too small, to induce them to follow the animal.

Your Commissioners recommend that the bounty be raised from \$6 to \$12, and that the same arrangements be made for the payment of the bounty in unorganized districts.

No bounty is paid for the destruction of Wolves, except in organized districts or within one mile of settlements. Those who live in unorganized districts, suffer much from the depredation of the Wolf, but the authorities are too poor to pay a bounty, and consequently, no effort is made to kill the destroyer.

FOXES AND OTHER VERMIN.

Your Commissioners recommend that \$1 bounty be paid for each Fox destroyed, as this animal is a great destroyer of young game.

Your Commissioners are of opinion that all vermin not specified and protected by the game laws should be killed at sight.

ON GENERAL QUESTIONS.

Your Commissioners find that the close seasons for Game and Fish are not generally respected throughout the Province, the laws being broken by all classes of the community, principally, however, by settlers, Indians, boys, and pothunters.

Your Commissioners unanimously recommend that a Provincial force of Game and Fish Wardens or Protectors should be established.

Your Commissioners recommend that the Sub-Wardens should be permanent residents of the localities under their supervision, because they are intimately acquainted with the game districts and the residents of the neighbourhood, and would naturally hear more of what was going on than a stranger could possibly do.

Your Commissioners recommend that the Sub-Wardens should be appointed by the Chief Warden, who in turn should be appointed by the Game and Fish Commissioners and might or might not be residents of the localities where they are stationed.

Your Commissioners are of opinion that much good would undoubtedly result from the appointment of such a force of Game Wardens, and recommend that every county or district in the Province should pay a certain sum annually, say \$50, to the Government towards the support and maintenance of the force aforesaid, this fund to be supplemented by the Government by an equal sum.

Your Commissioners recommend that the fines imposed for infractions of the Game Laws, should be largely increased, and that the law should provide distinctly that each case must be charged separately, without any option in the matter to the Magistrate or prosecutor. Your Commissioners recommend that one-half the fines should go direct to the Government and the other half to the informer.

Your Commissioners recommend as an additional means of assisting in the maintenance of the force of game wardens, that a \$25 license should be collected from all foreign sportsmen, and which would entitle them to shoot or fish during the open season, in the Province.

Your Commissioners also recommend that dealers in Game and Fish should be required to take out licenses, so that their premises may be subject to search at any time, at the hands of the Game Wardens, the license fees thus received to go direct to Government.

Your Commissioners find that the suggestion that every owner of sporting fire-arms should be required to register his weapon and pay a nominal fee therefor, is intensely unpopular and cannot recommend it.

Many sportsmen are of opinion that shooters and anglers, when sporting in counties where they do not reside, should be required to take out a local permit at a small fee to go towards the expense of supporting the local Game and Fish warden. Your Commissioners are of opinion that this suggestion is a useful one, and may in time be acted upon, when a permanent Commission has had time to elaborate its work. In the meantime, however, on account of the difficulty which it is thought would exist in the way of finding the Game Warden, and the loss of time to which sportsmen would be put, it is not deemed wise to recommend it.

Your Commissioners find that in some localities dogs are not taxed, and a large number are consequently kept for the purpose of hunting deer. Your Commissioners recommend, therefore, that all dogs throughout the Province be licensed. The license need not be taken out in any particular city or town, but the dog must be licensed somewhere.

Your Commissioners warmly approve of the suggestion made on several occasions that the sportsmen in the various counties and districts should be encouraged to form associations to protect Game and Fish therein.

Your Commissioners find that the formation of close or exclusive Game and Fish protection associations, which cover marshes by freehold or lease, is intensely unpopular, and cannot recommend that they be encouraged.

Your Commissioners recommend that all police officers, whether city, county or Government constables, and all Government bush rangers, should be Wardens under the Act for the purpose of enforcing the Game Laws.

Your Commissioners recommend that the Wardens should have power to arrest offenders on sight without a warrant, and should have power to try cases themselves, this power, however, to be only exercised in localities where the services of a magistrate cannot be conveniently obtained.

Your Commissioners recommend that persons arrested by the Wardens should be tried before the nearest magistrate without having to be taken

back to the place at which the offence was committed. Your Commissioners further recommend that in the event of the establishment of a permanent Game and Fish Commission, the members of the said Commission should be made magistrates under the Game Act for the purpose of taking evidence on oath and trying cases brought before their notice from time to time.

Your Commissioners unanimously and very strongly recommend the formation of a Provincial Game Park, in which protection could be afforded to the Game and fur-bearing animals of Ontario. Your Commissioners are of opinion that the establishment of such a preserve would be the best means of re-stocking the Province.

The preserve should, however, be Provincial in its character, and under the control of the Government and not in private hands.

The thanks of your Commissioners are due and are hereby tendered to all those who have assisted them in their work.

To the members of the Fish Commissions of the States of Michigan, New York, and Pennsylvania; the members of the Special Commission on the codification of the New York Game and Fish Laws; to Mr. Frank J. Amsden, of Rochester; Mr. W. P. Lett, of Ottawa; Mr. Richard Lancefield, Librarian of the Public Library, Hamilton; Mr. A. G. Yates, President of the Buffalo, Rochester, and Pittsburgh Railway, Rochester; Dr. H. M. Smith of the U.S. Fish Commission; Mr. C. B. Reynolds of New York City; and Professor F. W. True, Curator of Mammals in the National Museum at Washington, D. C., through whose courtesy many of the photographs of the animals illustrated have been obtained, especial thanks are due for very great courtesy shown to your Commissioners and very material assistance rendered.

Your Commissioners also desire to record their appreciation of the courtesy shown to them by the Mayors and Corporations of the various cities and towns in which meetings were held, for the use of the public buildings placed at their disposal for the purpose of taking evidence.

Visits were paid by your Commissioners, during the course of their work to the State Fish Hatcheries of Michigan and New York, the former being inspected on the 14th January, 1891, and the latter on 11th November, 1891.

Both these famous Hatcheries are so well known as to require little in the way of description.

The visits to the New York Hatchery at Caledonia, N.Y., was made under particularly favourable circumstances, at the close of the International conference on Game and Fish, held at Rochester, when your Commissioners were accompanied by many of the leading authorities on Fish Culture, under direction of Mr. Monroe E. Green, the Superintendent of the Hatchery.

The buildings and ponds were carefully inspected and found to be in perfect order, whilst the results of the work done, were apparent everywhere.

The visit to the Michigan Fish Hatchery at Paris, Mich., was made in company with Dr. Joel C. Parker, of the Michigan Fish Commission: and Mr. Walter D. Marks, the Superintendent in charge, showed your Commissioners every possible courtesy, and afforded ample opportunity of studying the work of artificial propagation of trout.

The work of both these Hatcheries is confined to the propagation of trout, but in the City of Detroit, the State of Michigan has also a White Fish Hatchery, which was visited and proved very highly interesting.

It is not the intention of your Commissioners to enter in this Report, upon the good work done by the various State Hatcheries in America, nor to enlarge upon their successful operations.

Annual reports can be had, upon application, by any who are interested in the matter, but in acknowledging the courtesy shown to them and the opportunity afforded of visiting the Hatcheries named, your Commissioners have pleasure in testifying to the successful manner in which the work is carried out, the stupendous work overtaken, and the gratifying results observable on every hand.

(Signed)

G. A. MACCALLUM, *Chairman.*

R. A. LUCAS.

ROBT. G. HERVEY.

JOHN H. WILLMOTT.

WALTER S. PULFORD.

JOHN MITCHELL.

ALEX. H. TAYLOR.

H. K. SMITH.

A. D. STEWART, *Secretary.*

**GAME LAWS IN FORCE IN THE PROVINCE OF
ONTARIO AT THE TIME WHEN THE
COMMISSION WAS ISSUED.**

REVISED STATUTES OF ONTARIO.

CHAPTER 221.

**An Act for the Protection of Game and Fur-bearing
Animals.**

*As amended, by Ontario Statutes, 1888, Cap. 36, and 1890,
Cap. 70.*

HER MAJESTY, by and with the advice and consent of the
Legislative Assembly of the Province of Ontario, enacts
as follows:—

1. None of the animals or birds hereinafter mentioned, shall
be hunted, taken or killed, within the periods hereinafter
limited.

1. Deer, elk, moose, reindeer or caribou between the twen-
tieth day of November and the fifteenth day of October; but
the period hereinbefore limited shall not, as to moose, elk,
reindeer or caribou, apply before or until the fifteenth day of
October, 1895, and no moose, elk, reindeer or caribou shall be
hunted, taken or killed between the first day of April, 1888,
and the fifteenth day of October, 1895.

2. Grouse, pheasants, prairie fowl or partridge, between the Grouse, etc.
first day of January and the first day of September;

3. Quail or wild turkeys, between the fifteenth day of Decem- Quail and
ber and the fifteenth day of October; but no wild turkey shall be wild turkeys
hunted, taken or killed before the fifteenth day of October, 1889;

4. Woodcock, between the first day of January and the Woodcock.
fifteenth day of August;

5. Snipe, rail and golden plover, between the first day of Snipe, rail and
January and the first day of September; plover.

6. Swans or geese, between the first day of May and the Swans and
first day of September; geese.

7. Ducks of all kinds, and all other water fowl, between the Ducks and
first day of January and the first day of September; other water
fowl.

8. Hares, between the fifteenth day of March and the first Hares.
day of September. 49 V. c. 45, s. 2, and 51 V. c. 36.

Possession,
how far
lawful.

2. No person shall have in his possession, any of the said animals or birds, no matter where procured, or any part or portion of any such animals or birds, during the periods in which they are so protected; provided that they may be exposed for sale for fifteen days, and no longer, after such periods, and may be had in possession for the private use of the owner and his family at any time, but in all cases the proof of the time of killing, taking or purchasing, shall be on the person so in possession. 49 V. c. 47, s. 3.

Exposure for
sale.

Protection of
eggs.

3. No eggs of any of the birds above mentioned shall be taken, destroyed, or had in possession by any person at any time. 49 V. c. 45, s. 4.

Trapping
forbidden.

4. None of the said animals or birds, except the animals mentioned in section 6 of this Act, shall be trapped, or taken by means of traps, nets, snares, gins, baited lines, or other similar contrivances; nor shall such traps, nets, snares, gins, baited lines or contrivances, be set for them, or any of them, at any time; and such traps, nets, snares, gins, baited lines, or contrivances, may be destroyed by any person without such person thereby incurring any liability therefor. 49 V. c. 45, s. 5.

Batteries, etc.
for taking
wild fowl, for-
bidden, and
night hunting
forbidden.

5. None of the contrivances for taking or killing the wild fowl, known as swans, geese or ducks, which are described or known as batteries, swivel guns or sunken punts, shall be used at any time, and no wild fowl, known as ducks, or other water fowl, except geese or swans, shall be hunted, taken or killed, between the expiration of the hour next after sunset and the commencement of the hour next before sunrise. 49 V. c. 45, s. 6.

Fur-bearing
animals
protected.

6. No beaver, mink, muskrat, sable, martin, otter, or fisher shall be hunted, taken or killed, or had in possession of any person between the first day of May, and the first day of November; nor shall any traps, snares, gins, or other contrivances, be set for them during such period; nor shall any muskrat house be cut, speared, broken or destroyed, at any time; and any such traps, snares, gins, or other contrivances so set, may be destroyed by any person without such person thereby incurring any liability therefor: provided that this section shall not apply to any person destroying any of the said animals in defence or preservation of his property. 49 V. c. 45, s. 7.

Proviso.

Penalties.

7. Offences against this Act shall be punished upon summary conviction on information or complaint before a Justice of the Peace, as follows:

(a) In case of deer, elk, moose, reindeer or caribou, by a fine not exceeding \$50, nor less than \$10, with costs, for each offence;

(b) In case of birds or eggs, by a fine not exceeding \$25 nor less than \$5, with costs, for each bird or egg;

(c) In case of fur-bearing animals, mentioned in section 6 of this Act, by a fine not exceeding \$25, nor less than \$5, with costs, for each offence;

(d) In the case of other breaches of this Act, and where no other penalty therefor is by this Act provided, by a fine not exceeding \$25, nor less than \$5, with costs. 49 V. c. 45, s. 8, and 51 V. c. 36.

8. The whole of such fine shall be paid to the prosecutor unless the convicting Justice has reason to believe that the prosecution is in collusion with, and for the purpose of benefiting the accused, in which case the said Justice may order the disposal of the fine as in ordinary cases. 49 V. c. 45, s. 9. Disposition of penalties.

9. In all cases confiscation of game shall follow conviction, and the game so confiscated, shall be given to some charitable institution or purpose, at the discretion of the convicting Justice. 49 V. c. 45, s. 10. Confiscation of game.

10. In order to encourage persons who have heretofore imported or hereafter import different kinds of game, with the desire to breed and preserve the same on their own lands, it is enacted that it shall not be lawful to hunt, shoot, kill or destroy any such game without the consent of the owner of the property wherever the same may be bred. 49 V. c. 45, s. 11. Protection of game preserves.

11. It shall not be lawful for any person to kill or take, any animal protected by this Act, by the use of poison or poisonous substances, nor to expose poison, poisoned bait or other poisoned substances, in any place or locality, where dogs or cattle may have access to the same. 49 V. c. 45, s. 12. Use of poison prohibited.

12.—(1) No person shall at any time hunt, take or kill, any deer, elk, moose, reindeer, caribou, partridge or quail, for the purpose of exporting the same out of Ontario, and in all cases the onus of proving that any such deer, elk, moose, reindeer, caribou, partridge or quail, as aforesaid, so hunted, taken or killed, is not intended to be exported as aforesaid, shall be upon the person hunting, killing or taking the same, or in whose possession or custody the same may be found. Deer, moose, etc., not to be killed for export.

(2) No person shall by himself, his clerk, servant or agent, expose, or keep for sale, or directly or indirectly upon any pretence or any device, sell or barter, or in consideration of the purchase of any other property, give to any other person any quail, hunted, taken or killed in the Province of Ontario, and this sub-section shall continue in force until the fifteenth day of October 1892. Sale of quail prohibited.

(3) Offences against this section, shall be punished by a fine not exceeding \$25, nor less than \$5 for each animal or bird. 49 V. c. 45, s. 13, and 53 V. c. 70.

13. No owner of any hound, or other dog known by the owner to be accustomed to pursue deer, shall permit any such hound, or other dog, to run at large in any locality where deer Hounds not to run at large.

are usually found, during the period, from the fifteenth day of November, to the fifteenth day of October, under a penalty on conviction, of not more than \$25, nor less than \$5, for each offence; any person harbouring or claiming to be the owner of any such hound or dog shall be deemed the owner thereof. 49 V. c. 45, s. 14.

Appointment
of game
inspectors.

14. It shall be lawful for the council of any county, city, town, township, or incorporated village, to appoint an officer who shall be known as the game inspector for such county, city, town, township or incorporated village, and who shall perform such duties in enforcing the provisions of this Act, and be paid such salary, as may be mutually agreed upon. 49 V. c. 45, s. 15.

Duties of in-
spectors.
Seizure of
game.

15.—(1) It shall be the duty of every game inspector appointed as aforesaid, forthwith to seize all animals or portions of animals in the possession of any person contrary to the provisions of this Act, and to bring the person in possession of the same before a Justice of the Peace, to answer for such illegal possession.

Prosecutions.

(2) It shall also be the duty of every game inspector, to institute prosecutions against all persons found infringing the provisions of this Act, or any of them, and every inspector may cause to be opened, or may himself open in case of refusal, any bag, parcel, chest, box, trunk, or receptacle in which he has reason to believe that game killed or taken during the close season, or peltries out of season, are hidden.

Search for
game.

(3) Every inspector, if he has reason to suspect, and does suspect that game killed or taken during the close season, or peltries out of season, are contained or kept in any private house, shed, or other building, shall make a deposition in the Form A annexed to this Act, and demand a search warrant to search such store, private house, shed, or other building, and thereupon such Justice of the Peace may issue a search warrant according to Form B. 49 V. c. 45, s. 16.

Deer not
to be hunted
except by per-
sons resident
in Ontario or
Quebec.

16. No person shall at any time prior to the year 1895, hunt take or kill any deer, unless such person has been actually resident and domiciled within the Province of Ontario or within the Province of Quebec for a period of at least three months next before the said time, and any person offending against this section shall be liable to a fine not exceeding \$20, nor less than \$10, with costs of the prosecution, for each animal so hunted, taken or killed, and in default of immediate payment of said fine and costs shall be liable to be imprisoned in the common gaol of the county or district wherein the offence was committed for a period not exceeding three months: Provided always that this section shall not apply to any person who, being a shareholder of or in an incorporated company, hunts, kills or takes on the lands of such company, any of the animals mentioned in this section: Provided, moreover, that this section shall not apply to any person in any year for which he has obtained from the Commissioners of Crown Lands

a permit to hunt, kill or take any of the animals in this section mentioned, and the Commissioner of Crown Lands is hereby authorized to grant and issue such a permit upon payment therefor of a fee of \$10 for each year during which the same is to be in force, and upon being satisfied that the person applying for the permit may be relied upon to observe and comply with the other provisions of this Act. 51 V. c. 36.¶

17. No one person shall, during any⁷one year prior to the year 1895 kill or take alive more than five deer; and no two persons hunting together or from one camp or place of rendezvous, or forming or being what is commonly known as a hunting party shall, in any one year prior to the year 1895, kill or take alive more than eight deer; and no three or more persons hunting together or from one camp or place of rendezvous, or forming or being what is commonly known as a hunting party shall, in any one year prior to the year 1895, kill or take alive more than twelve deer, and any person offending against this section shall be liable to a fine not exceeding \$20, nor less than \$5, with costs of the prosecution for each deer beyond or exceeding the number so permitted to be killed or taken as aforesaid, and in default of immediate payment of such fine and costs shall be liable to be imprisoned in the common gaol of the county or district within which the offence was committed for a period not exceeding three months. 51 V. c. 36.

Limit as to number of deer which any one person or several persons hunting together may kill.

18. Where, under this Act any person has been convicted of an offence against any of the provisions of this Act, such person, in default of the immediate payment of any fine or costs imposed upon him or for which he has been adjudged to be liable in respect or because of such offence, shall be liable and may be adjudged to be imprisoned in the common gaol of the county or district in which the offence was committed for a period not exceeding three months. 51 V. c. 36.

Imprisonment in default of fine.

19. On the trial of any complaint, proceeding, matter or question under this Act, the person opposing or defending, or who is charged with any offence against or under any of the provisions of this Act, shall be competent and compellable to give evidence in or with respect to such complaint, proceeding, matter or question. 51 V. c. 36.

Evidence of accused.

20. A conviction or order made in any matter arising under this Act, either originally or on appeal, shall not be quashed for want of form. 51 V. c. 36.

Conviction not to be quashed for want of form.

21. All prosecutions under this Act may be brought and heard before any of Her Majesty's justices of the peace in and for the county and district where the penalty was incurred, or the offence was committed, or wrong done, and in cities, towns and incorporated villages in which there is a police magistrate, before such police magistrate; and save where otherwise provided by this section the procedure shall be governed by *The Act respecting Summary Convictions before Justices of the Peace and Appeals to General Sessions.* 51 V. c. 36.

Before whom prosecutions to be brought.

FORM A.

(Section 15.)

I, _____ undersigned Game Inspector for
do hereby declare that I have reason to suspect, and do
suspect, that game killed or taken during the close season, or furs out of
season, etc., etc., (*as the case may be*) are at present held and concealed
(*describe the property, occupant, etc., and the place*).

Wherefore I pray that a warrant may be granted and given to me to
effect the necessary searches (*describe here the property, etc., as above*).

Sworn before me at
this _____

day of
A. D. 18
L. B.
J. P. }

X. Y.
Game Inspector.

49 V. c. 45, Form A.

FORM B.

(Section 15.)

Province of Ontario, }
County of _____ }

To each and every constable of
County of _____

Whereas,

Game Inspector for
has this day declared under oath before me, the
undersigned, that he has reason to suspect that (game, or birds killed or
taken during the close season, or furs out of season, etc., *as the case
may be*) are at present held and concealed, (*describe property, occupant,
place, etc.*)

Therefore, you are commanded by these presents in the name of Her
Majesty, to assist the said _____ Game Inspector,
and to diligently help him to make the necessary searches to find the
(*state the birds or game killed or taken during the close season, or furs out of
season, etc.,*) which he has reason to suspect and does suspect to be held
and concealed in (*describe the property, etc., as above*) and to deliver, if
need there be, the said birds, etc., (*as the case may be*) to the said
Game Inspector, to be by him brought before me on or before any other
magistrate to be dealt with according to law.

Given under my hand and seal
at _____ County of _____
this _____ day of _____

L. S.

A. D. 18

L. B.
J. P. }

49 V. c. 45, Form B.

The following Bill amending the foregoing Act for the Protection of Game and Fur-bearing Animals was passed by the Ontario Legislature on 14th April, 1892, subsequent to the receipt of your Commissioners' report.

CHAPTER 58.

An Act to amend the Act for the Protection of Game and Fur-bearing Animals.

HER MAJESTY, by and with the advice and consent of the Legislative Assembly of the Province of Ontario, enacts as follows:—

1—(1) No deer, elk, moose, reindeer or caribou shall be hunted, taken or killed between the fifteenth day of November and the first day of November of the following year; but the period hereinbefore limited shall not as to moose, elk, reindeer or caribou, apply before or until the first day of November, 1895, and no moose, elk, reindeer, or caribou shall be hunted, taken or killed before the first day of November, 1895.

Close period
for deer, elk,
moose, etc.

(2) No owner of any hound or other dog known by the owner to be accustomed to pursue deer shall permit any such hound or other dog to run at large in any locality where deer are usually found during the period from the fifteenth day of November to the first day of November of the following year. Any person harbouring or claiming to be the owner of such hound or dog shall be deemed to be the owner thereof; and any hound or dog found running deer between the fifteenth day of November and the first day of November following may be killed on sight by any person, and the person killing such hound or dog shall not be liable to any penalty or damages therefor.

Hunting with
hounds, when
lawful.

(3) Section 17 of the said Act is repealed and the following substituted therefor:—

Rev. Stat., c.
221, s. 17, re-
pealed.

17. No one person shall during any one year or season kill or take more in all than two deer, elk, moose, reindeer or caribou. But this shall not apply in the case of deer which are the private property of any person and which have been killed or taken by such person or by his direction or with his consent, in or upon his own lands or premises.

Limit of num-
ber of deer,
etc., which
one person
may kill.

(4) Hunting or killing deer by what is known as "crusting" or while they are "yarding" is hereby declared unlawful.

Certain kinds
of hunting
prohibited.

(5) No fawn shall at any time be hunted, killed, taken or possessed; possession of a fawn after being killed shall be presumptive evidence of a violation of this sub-section.

Killing of
fawns pro-
hibited.

(6) No common carrier, or other person shall transport or have in possession for that purpose, in this Province, after the same has been killed, any wild deer or the raw skin thereof or any venison save only from the first to the 22nd day of

November in each year unless accompanied by an affidavit that the same was hunted and taken during the open season.

Hunting game during close periods prohibited.

2.—(1) It shall be unlawful for any person to catch, kill or destroy, or to pursue with such intent,

- (a) Any grouse, pheasants, prairie fowl or partridge, woodcock, snipe, rail, plover, or any other water fowl or other game bird or animal, (including black and gray squirrels, and hares) not herein otherwise provided for, at any time between the fifteenth day of December, and the fifteenth day of September in the following year;
- (b) Or any quail or wild turkeys between the fifteenth day of December and the fifteenth day of October of the following year;
- (c) Or any swans or geese at any time between the first day of May and the fifteenth day of the following month of September;
- (d) Or ducks of all kinds at any time between the fifteenth day of December and the first day of the following month of September;

(2) Notwithstanding anything in this section contained, no wild turkeys shall be hunted, taken or killed at any time before the fifteenth day of October, 1897, and no beaver, otter, or fisher before the first day of November, 1897.

(3) No person shall catch, kill or take more than three hundred ducks during any one season.

53 V. c. 70, s. 1 amended.

(4) Section 1 of chapter 70, of the Act passed in the 53rd year of Her Majesty's reign, is amended by striking out the words "partridge or quail" at the end thereof and substituting therefor the words, "partridge, quail, woodcock, snipe, ducks of all kinds, and all other game birds and animals."

Rev. Stat., c. 221, s. 6 amended.

3. Section 6 of the said Act is hereby amended by substituting the word "April" for the word "May" in the third line thereof.

Rev. Stat., c. 221, s. 5 amended.

4.—(1) Section 5 of the said Act is amended by striking out that portion thereof after the word "killed" in the fifth line thereof and substituting therefor the words "from sailboats or steam yachts;" and by adding the following as subsection (2) thereof:—

Killing wild fowl at night forbidden.

(2) No person shall kill or shoot at any bird or wild fowl between sunset and sunrise.

Hunting or fishing on Sunday prohibited.

5. No person shall on the Lord's Day hunt game animals or birds, or take, kill or destroy any game animals or birds, or use any gun, or other engine for that purpose.

6.—(1) Section 2 of the said Act is amended by striking out the word "fifteen" in the fifth line thereof and substituting therefor the word "five" and by adding to the said section the following as sub-section (2) thereof :—

(2) No person shall, by himself, his clerk, servant or agent, expose or keep for sale, or directly or indirectly upon any pretence or device, sell or barter or in consideration of the purchase of any other property give to any other person any quail, snipe, wild turkey, woodcock or partridge, no matter where killed or procured, for a period of two years from the passing hereof.

Rev. Stat., c.
221, s. 2
amended.

Purchase, sale,
or keeping for
sale certain
birds prohib-
ited for three
years.

7. No person shall at any time enter into any growing or standing grain not his own with sporting implements about his person, nor permit his dog or dogs to enter into any such growing or standing grain without permission of the owner or occupant thereof, and no person shall at any time hunt or shoot upon any enclosed land of another after being notified not to hunt or shoot thereon, and any person who shall, without the right to do so, hunt or shoot upon any enclosed land of another after having been notified not to hunt or shoot thereon, shall be deemed guilty of a violation of this Act; but nothing in this section contained shall be so construed as to limit or in any way affect the remedy at common law of any such owner or occupant for trespass. Any owner or occupant of land may give the notice provided for in this section by maintaining two sign boards at least one foot square, containing such notice, upon at least every forty acres of the premises sought to be protected, on or near the borders thereof, or upon or near the shores of any waters thereon, in at least two conspicuous places, or by giving personal written, or verbal notice; and such notice firstly herein provided for may be in the form following:—"Hunting or shooting on these lands forbidden under Ontario game laws." Provided that any person who shall without authority in that behalf put up, or cause to be put up, any such notice on any lands of which he is not the owner, or the possession of which he is not legally entitled to, shall be deemed guilty of a violation of this Act.

Hunting on
lands of other
persons with-
out permis-
sion.

8.—(1) Section 16 of the said Act is hereby repealed and the following substituted therefor :—

16. No person not a resident and domiciled in the Provinces of Ontario or Quebec shall be entitled to hunt, take, kill, wound or destroy any moose, elk, reindeer, caribou or other deer, mink, otter, fisher, sable, beaver or any other game animal or bird referred to in this Act, without having first obtained a license in that behalf; every such license shall be signed by the Chief Fish and Game Warden, and countersigned by the Provincial Secretary or his Deputy, and shall be in force for one season only, and shall be subject to the provisions of the game laws in force in the Province at the time the said license was granted; the fee to be paid therefor shall be \$25, and shall

Rev. Stat., c.
221, s. 16 re-
pealed.

Certain ani-
mals not to be
hunted except
by residents
of Ontario
and Quebec
until license
obtained.

be payable to the Provincial Treasurer to be applied towards the expenses incurred in carrying out the provisions of the game laws.

License to be shown on request.

(2) Every such person shall, on request by any person whomsoever within the Province, at all times, and as often as requested, produce and show to the person making the request, such license; and if he shall fail or refuse to do so he shall forfeit any such license he may possess, and shall if found hunting, taking, pursuing, killing, wounding or destroying any such animal or bird, or if on proof of the facts mentioned in the first sub-section hereof, and upon proof of such request and failure, or of refusal, be deemed to have violated the provisions of this section.

Permits to guests of residents of Ontario.

(3) The Provincial Secretary, any member of the Board of Fish and Game Commissioners, the Chief Fish and Game Warden or any of the Wardens may grant a permit to a guest of a resident of the Province free of charge for a term not exceeding one week.

Board of Fish and Game Commissioners.

9. There is hereby created a board to be known by the name of the Board of Fish and Game Commissioners of the Province of Ontario, which board shall be composed of five members, who shall be appointed by the Lieutenant-Governor in Council for the term of three years each, in the manner hereinafter set forth, and who, except the secretary, who may be a member of said board, shall serve without compensation, either direct or indirect, other than actual disbursements. One of the said Commissioners shall hold office until the first day of April, 1893, two shall hold office until the first day of April, 1894, and the remaining two shall hold office until the first day of April, 1895, and the said Commissioners shall, as soon as may be after this Act takes effect, assemble at the city of Toronto, and by lot decide between themselves as to their respective terms of office. Commissioners may from time to time at the expiration of their terms of office, be reappointed for like terms of three years.

Filling vacancies in Board.

(2) The Lieutenant-Governor in Council shall, from time to time, as vacancies on the said board occur, whether by expiration of term, resignation or any other cause, make appointments to fill such vacancies, and shall appoint the president and secretary of the said board.

Meetings, rules and regulations.

(3) The said board shall meet at least once and not oftener than three times each year, and shall make rules and regulations subject to the approval of the Lieutenant-Governor in Council for the guidance of game and fish wardens and sub-wardens.

Duties and powers of Board

10. The Lieutenant-Governor in Council upon the recommendation of the said Board, may appoint a chief game and fish warden, who shall act as secretary and business agent of said board, and may also appoint other game and fish wardens, not exceeding four in number, whose duties shall be prescribed

by rules and regulations in that behalf. The compensation of the secretary and the said chief warden and other wardens shall be fixed by the Lieutenant-Governor in Council, and shall be paid out of the license fees and fines collected under the provisions of this Act and such moneys as may be appropriated for the purpose by the Legislative Assembly of the Province and shall not, exclusive of travelling expenses, exceed, in the whole, the sum of \$1,200 ; and said board shall have the power to appoint, or may authorize the chief game warden to appoint, at any time, deputy wardens in any part of the Province for such period of time as they in their discretion may determine.

11. It shall be the duty of said board to give all necessary directions and to take all reasonable measures for securing the enforcement of the laws for the protection of game, and for giving effect to the provisions of laws for the preservation, propagation and protection of the fish of the Province, to collect, classify and preserve all such statistics, data and information as they may think will tend to promote the objects of such laws ; to conduct all the necessary correspondence, to take charge of and keep all reports, books, papers, documents or specimens which they may collect in the discharge of their duties under this Act ; and to prepare an annual report to the Lieutenant-Governor on or before the thirty-first day of December of each year, shewing what has been done by them during the year, and the manner in which their duties have been performed, with such recommendations for legislative action, if any, as the said board may deem calculated to better promote the preservation of fish and game and increase the more useful food fishes within the Province and to lessen the cost of the same.

Board to collect information and statistics.

12. The provisions of the game laws of this Province shall not apply to Indians or to settlers in the unorganized districts of this Province with regard to any game killed for their own immediate use for food only and for the reasonable necessities of the person killing the same, and his family, and not for the purposes of sale or traffic. And nothing herein contained shall be construed to affect any rights specially reserved to or conferred upon Indians by any treaty or regulations in that behalf made by the government of the Dominion of Canada, with reference to hunting on their reserves or hunting grounds or in any territory specially set apart for the purpose ; nor shall anything in this Act contained apply to Indians hunting in any portion of the Provincial territory as to which their claims have not been surrendered or extinguished.

Game laws not to apply to Indians and settlers in unorganized districts.

13. Any person offending against any of the provisions of sections 1 and 8 of this Act shall be liable for each offence to a fine not exceeding fifty dollars, and not less than twenty dollars, together with the costs of prosecution, and any person offending against any other of the provisions of the said Act

Penalties.

as hereby amended shall be liable for each offence to a fine not exceeding twenty-five dollars nor less than five dollars, together with the costs of prosecution, and in default of immediate payment of such fine and costs shall be imprisoned in the common gaol of the county where such conviction shall take place, for a period not exceeding three months. 48 Vic. c. 9, s. 28.

(2) The Justice or Justices shall, in any such conviction, adjudge that the defendant be imprisoned, unless the penalty and also the costs and charges of prosecution and commitment and of conveying the defendant to prison are sooner paid.

(3) The amount of the costs and charges of the commitment and conveying of the defendant to prison are to be ascertained and stated in the warrant of commitment.

Warden may
convict offender
on view.

14. Any of the wardens appointed under the provisions of this Act, or any magistrate may, upon his own view, convict for any offence against the provisions of the said Act or this Act.

Application of
fines.

15. One half of every fine collected under the provisions of the said Act as hereby amended shall be paid to the prosecutor or person on whose evidence a conviction is made, and the other half shall be paid to the Treasurer of the Province; but the wardens appointed under this Act shall not be entitled to any portion of fines in cases where they may act as prosecutors.

Arrest of
offenders
without process.

16---(1) Any officer specially authorized under the provisions of this Act to enforce the fish and game laws may without process arrest any violator of said laws for an offence committed in his presence; and he shall with reasonable diligence cause him to be taken before any justice of the peace for a warrant and trial either in the county where the offence was committed or in the county in which the violator was arrested, and jurisdiction in all cases under the said Act is hereby granted to all justices of the peace, magistrates, stipendiary magistrates, and all other courts, to be exercised in the same way and manner as if the offence had been committed in their respective counties. Any officer who shall maliciously or without probable cause abuse his power in such proceedings shall be guilty of an offence under this Act.

Penalties on
officers abusing
their
powers.

(2) Sheriffs, deputy-sheriffs, provincial police or constables, county constables, police officers, wood-rangers, crown-lands agents, timber agents, fire wardens and fishery inspectors or overseers, are vested with the powers of deputy-wardens and authorized to enforce any of the provisions of this Act, and shall receive for their services the same fees.

Officers
authorized to
enforce laws.

(3) Officers authorized to enforce the game laws, and all other persons, may recover the penalties for the violation thereof in an action on the case in their own name or by com-

plaint or indictment in the name of the Province, and such prosecution may be commenced in any county in which the offender may be found.

17. The following provisions shall have effect with respect to summary proceedings for offences, fines and penalties under this Act: Penalties, how recoverable.

(1) The information shall be laid within two months after the commission of the offence. Procedure upon prosecutions.

(2) The description of an offence in the words of the said Act or in any similar words, shall be sufficient in law;

(3) Any exception, exemption, proviso, excuse or qualification whether it does or does not accompany the description of the offence in the said Act as hereby amended, may be proved by the defendant, but need not be specified or negatived in the information or complaint, and if so specified or negatived, no proof in relation to the matters so specified or negatived shall be required on the part of the informant or complainant;

18. The words "the said Act," wherever they occur in this Act shall mean the *Act for the protection of Game and Fur-bearing Animals*, as amended by any subsequent Acts, or this Act, and this Act shall be read with and as forming a part of the said Act, and all laws inconsistent with the provisions of this Act are hereby repealed "Said Act," to mean Rev. Stat. c. 221 and amendments.

FISHERY LAWS IN FORCE IN THE PROVINCE OF
ONTARIO AT THE TIME THE COMMISSION WAS
ISSUED.

REVISED STATUTES OF ONTARIO.

CHAPTER 32.

An Act to regulate the Fisheries of this Province.

SHORT TITLE, s. 1.	CANCELLATION OF LEASES, ETC., s. 91.
APPLICATION OF ACT, s. 2.	RIGHTS AND LIABILITIES OF LESSEES, ss. 20, 21.
INTERPRETATION, s. 3.	RESERVATION FROM LEASE, s. 22.
LEASES AND LICENSES, ss. 4-8.	LEASE OF WATERS IN WHICH INDIANS ALLOWED TO FISH, s. 23.
PENALTY FOR TRESPASS, s. 9.	SETTING APART WATERS FOR PROPAGA- TION OF FISH, s. 24.
RIGHTS OF PASSAGE, s. 10.	PERMISSION TO OBTAIN FISH, s. 25.
FISHERY OVERSEERS, ss. 11, 12, 14.	PENALTIES, ss. 26-29.
REGULATIONS BY GOVERNOR IN COUNCIL, s. 13.	APPLICATION OF FINES AND PENAL- TIES, s. 30.
GUARDIANS FOR PROTECTION OF FISHERIES, s. 15.	CERTAIN ACTS TO APPLY TO PROSE- CUTIONS, s. 31.
RETURNS BY LESSEES, s. 16.	REPORTS TO BE LAID BEFORE LEGIS- LATURE, s. 32.
CONTROL OF FISHING RIGHTS PERTAIN- ING TO GRANTED LANDS MAY BE ASSUMED BY COMMISSIONER, s. 17.	
PERMITS, s. 18.	

HER MAJESTY, by and with the advice and consent of the Legislative Assembly of the Province of Ontario enacts as follows:—

- Short title. 1. This Act may be cited as "*The Ontario Fisheries Act.*" 48 V. c. 9, s. 1.
- Application of Act. 2. This Act and its respective provisions apply to all fisheries and rights of fishing in respect of which the Legislature of Ontario has authority to legislate. 48 V. c. 9, s. 2.
- Interpretation. 3. Where the following words occur in this Act they shall be construed in the manner hereinafter mentioned, unless a contrary intention appears:—
- "Crown Lands." 1. "Crown Lands" shall be held to mean and include such ungranted Crown or Public lands or Crown domain as are within and belong to the Province of Ontario, and whether or not any waters flow over or cover the same.
- "Fish." 2. "Fish" shall mean and include every kind, variety and description of fish in respect of the catching or killing of which within the Province the Legislature of Ontario has authority to legislate.
- "Waters." 3. "Waters" shall be held to mean and include such of the waters of any lake, river, stream or water-course wholly or partly within said Province, as flow over or cover any Crown Lands.

4. "Commissioner" shall mean the Commissioner of Crown Lands. "Commissioner."

5. "Fishery Lease" shall be held to include and mean a lease or instrument conferring for a term therein mentioned upon the lessee therein named the right to take and keep, for the purposes of fishing, under and subject to the provisions of this Act and of all regulations made thereunder, the exclusive possession of any Crown Lands therein described, with the exclusive right to fish in any waters flowing over or covering the same at such time and in such manner and with such restrictions and subject to such regulations as may be permitted, regulated or prescribed by any lawful authority in that behalf. "Fishery Lease."

6. "Fishing License," shall be held to mean and include a license granting for the time therein mentioned to the licensee therein named, upon payment of the license fee therein stipulated, a right to fish in any waters flowing over or covering ungranted Crown Lands therein described, at such time, in such manner and with such restrictions and subject to such regulations as may be permitted, regulated or prescribed by any lawful authority in that behalf, but no fishing license shall be deemed to be, or be construed to operate as or in the nature of a lease or demise. 48 V. c. 9, s. 3. "Fishing License."

4. Subject to the other provisions of this Act, every fishery lease and every fishing license shall be granted and issued by the Commissioner but subject always to such conditions, regulations and restrictions as may from time to time be made, ordered or established in that behalf by the Lieutenant-Governor in Council, and published in the *Ontario Gazette*: Provided, however, that no lease or license shall be granted or issued in respect of or as including any lands or waters where an exclusive right of fishing already exists by law 48 V. c. 9, s. 4. Issue of leases and licenses. Proviso.

5. A fishery lease shall not be granted for a longer period than five years from the date thereof, and shall only be made to the highest bidder of an annual rental therefor after the same shall have been put up to public competition, of which at least one month's notice shall be given in the *Ontario Gazette*, and in such other way as to the Commissioner may seem the most advantageous; provided always that the price offered be at least equal to the upset price fixed by the Commissioner, and that if not sold, the Commissioner may afterwards, by private sale, dispose of the said lease at the upset price, or for a greater sum; and the signature of the Commissioner to the lease shall be evidence in all Courts of a compliance with the provisions of this section. 48 V. c. 9, s. 5. Leases to be made at annual rental. Proviso.

6. The rental shall be paid in advance, and a lessee who fails to pay the rental at the date fixed by his fishery lease shall Forfeiture for non-payment.

forfeit all rights thereunder, and the same may be thereupon annulled by the Commissioner of Crown Lands, and may be again put up to sale, but notwithstanding the annulling of the lease, the lessee shall be liable at the suit of Her Majesty for the annual rental and the expenses incurred by the lease being again put up to sale. 48 V. c. 9, s. 6.

Transfer of
leases.

7. No lessee or licensee shall have the right to sublet, transfer or assign any right, interest or privilege granted or conferred upon him under the provisions of this Act, without first receiving the written consent of the Commissioner, or some other person authorized to that effect. 48 V. c. 9, s. 7.

Lessee not
entitled to
compensation
in case of
deficiency by
reason of
error.

8. If in consequence of any incorrectness of survey or other error or cause whatsoever, a fishery lease is found to comprise lands included in a fishery lease of a prior date, the fishery lease last granted shall be void in so far as it interferes with the one previously issued, and the holder or proprietor of the lease so rendered void shall have no claim for indemnity or compensation by reason of such avoidance. 48 V. c. 9, s. 8.

Penalty in
case of
trespass.

9. If any person shall enter upon or pass over the land described in a fishery lease without permission of the lessee or his representative, he shall, on conviction thereof incur and pay a fine of not less than \$1 nor more than \$10, with costs of prosecution, for each offence, and in default of immediate payment of such fine and costs shall be imprisoned in the common gaol of the county, within which the offence was committed, for a period not exceeding one month; provided, however, that this section shall not apply to any person entering upon or passing over the lands in discharge of any duty imposed by law, nor, when the lands are included in a timber license, to the holder thereof, who shall at all times have the right to cut and take away all trees, timber and lumber within the limits of his license; nor to prevent the owners or occupiers of lands bordering on any waters to a general right of passage to and from such waters; nor the public user of any waters, or the banks thereof, either for the conveyance of lumber of any kind, or for the free navigation thereof by vessels, boats, or other craft; nor to any user under license by the Crown of any such lands or waters for any purpose or occupation not inconsistent with the provisions of this Act. 48 V. c. 9, s. 10.

Proviso.

Rights of
passage.

10.—(1) Every fishery lease shall be deemed and taken to have been made and granted subject to a right of passage to and from any waters in favour of the occupants, if any, under title from the Crown, of the lands immediately in rear of those included in the fishery lease.

(2) In the discharge of his duties every fishery overseer, and every person by him accompanied or authorized to such effect, may enter upon and pass through or over private property without being liable for trespass. 48 V. c. 9, s. 11.

11. The Lieutenant-Governor in Council may, if he considers it expedient, appoint Fishery Overseers, whose duties shall be defined by the regulations made under this Act, and every overseer so appointed and having taken the oath of office prescribed by this Act, shall be, *ex-officio*, a Justice of the Peace for all the purposes of this Act and of any regulations made under authority thereof within the county or district for which he is appointed to act as overseer. 48 V. c. 9, s. 12.

Appointment
of Fishery
Overseers.

12. Every fishery overseer shall, before acting as a Justice of the Peace under this Act, take and subscribe the following oath:—

Oath of
Overseer.

"I, A. B., a Fishery Overseer in and for the district or territory described in my appointment, do solemnly swear that, to the best of my judgment, I will faithfully, honestly and impartially fulfil, execute and perform the office and duty of such overseer according to the true intent and meaning of *The Ontario Fisheries Act*, and of all regulations made or to be made thereunder. 'So help me God.'"

48 V. c. 9, s. 13.

13.—(1) So far as the Legislature of Ontario has authority so to enact, the Lieutenant-Governor in Council may, from time to time, make regulations, and may from time to time vary, amend, and alter all and every such regulation as shall be found necessary or deemed expedient for the better management and regulation of Crown lands leased under the operation of this Act and the fishing rights theretopertaining, or of any fishing license which may be made or granted under the operation of this Act; and to prevent the destruction of fish, and to forbid fishing in any waters except under authority of a fishery lease or fishing license; and all regulations shall have the same force and effect as if herein contained and enacted, and every offence against any regulation may be stated as having been made in contravention of this Act.

Regulations
may be made
by Lieutenant-
Governor in
Council.

(2) The publication of any regulation in the *Ontario Gazette*, shall be sufficient notice to give legal effect to the same; and the production of a copy of a paper purporting to be the *Ontario Gazette*, and containing any regulation shall, so far as the Legislature of Ontario has authority so to enact or direct, be admitted as full and sufficient evidence of the same, in all Courts. 48 V. c. 9, s. 14.

14. The remuneration of the Fishery Overseers and of all other persons employed to perform any duty imposed by this Act or by the regulations made under it, shall be determined by the Lieutenant-Governor in Council, and shall be paid out of moneys derived under the provisions of this Act, and appropriated for that purpose by vote of the Legislative Assembly. 48 V. c. 9, s. 15.

Remuneration
of Overseers,
etc.

15.—(1) The Commissioner may, upon the request of any lessees of fishery leases, or without such request, appoint as many

Appointment
of guardians
for protection
of fisheries.

guardians as may be deemed necessary for the effectual protection of the fisheries, or rights of fishing in any waters; such guardians shall be sworn to the faithful discharge of their duties, and especially to prevent the taking or killing, or attempting to take or kill fish in the waters under their charge by illegal means, or at times when the taking or killing of fish is prohibited by lawful authority; they shall be employed for such length of time as the Commissioner shall consider necessary, and their services shall be paid for by the lessees.

(2) If thereunto required by the Commissioner a lessee shall keep and maintain, at his own expense, within the limits granted to or conferred upon him by a fishery lease, and for such time or times as the Commissioner may in that behalf prescribe, one or more efficient guardians, whose duties shall in all respects be the same as those of the guardians in the preceding sub-section mentioned. 48 V. c. 9, s. 16.

Returns by lessees.

16. It shall be a condition of every Fishery Lease that the lessee shall, as soon as possible after the close of every fishing season, transmit to the Department of Crown Lands a statement of the number and weight of fish caught in the waters affected by the lease. 48 V. c. 9, s. 17.

Control of fishing rights pertaining to granted lands may be assumed by Commissioner with consent of owner.

17. The Commissioner may, with the consent of the owners, and for the purposes of management only, assume the control of fishing rights pertaining to granted lands fronting on any stream, river or lake, with a view of improving or leasing the same in connection with those pertaining to Crown Lands fronting on the same stream, river or lake, and paying over to the private owners of such fishing rights a proportionate share of the rent received for the whole. 48 V. c. 9, s. 18.

Fishing permits.

18. It shall be lawful for the Commissioner, or any officer thereto authorized by him, to grant permits to fish in any waters adjoining Crown Lands not under lease for a period not exceeding one month, upon such terms and subject to such restrictions and conditions as shall be provided by order of the Lieutenant-Governor in Council to that effect. 48 V. c. 9, s. 19

Cancellation of leases, etc.

19. Any fishery lease, or fishery license or permit held by any person, convicted of any contravention of this Act, or of any regulations made and published as aforesaid, may be annulled and cancelled by the Commissioner, and thereupon such person shall forfeit all his rights and privileges under such lease, license or permit, and shall not be entitled to or have any claim or right to any indemnity or compensation in respect thereof. 48 V. c. 9, s. 20.

Lessee to have right of action for trespass.

20. A fishery lease shall entitle the lessee to institute in his own name any action, or proceeding against any person unlawfully trespassing upon, damaging or invading the

rights, property, premises or privileges granted by the lease and also to sue for and recover any damages sustained by him as such lessee. 48 V. c. 9, s. 21.

21. Every lessee to whom a fishery lease is granted, shall be answerable for damage done to the lands in the lease described, and the timber growing thereon, or on adjoining lands, either by himself or his agents, or persons under his control, either from waste or from want of sufficient precautions in lighting, watching over or extinguishing fires; and it shall be incumbent on every lessee, in case of damage caused by fire, to prove that all such precautions have been taken. 48 V. c. 9, s. 22.

Liability of lessee for damage to lands included in lease.

22. It shall be lawful for the Lieutenant-Governor in Council, upon the recommendation of the Commissioner, to reserve from lease for one or more years, for purposes of improvement, any waters, the exclusive right of fishing in which is within the meaning of section 2 of this Act. 48 V. c. 9; s. 23.

Waters may in certain cases be reserved from lease.

23. The Commissioner may appropriate and license or lease certain waters in which certain Indians shall be allowed to catch fish for their own use in and at whatever manner and time, and subject to whatever terms and conditions are specified in the license or lease. 48 V. c. 9, s. 24.

Lease of waters in which Indians allowed to fish.

24. The Commissioner may authorize to be set apart, and to be leased, any waters for the natural or artificial propagation of fish, and any person who wilfully destroys or injures any place so set apart or used for the propagation of fish, or fishes therein without written permission from a Fishery Overseer, or from the lessee or licensee thereof, or uses therein a fishing light or other like implement for fishing, during the period for which the waters are so set apart, shall for every offence incur and pay a fine not exceeding \$100, with costs of prosecution, and in default of immediate payment of such fine and costs, shall be imprisoned in the common gaol of the county wherein the offence was committed, for a period not exceeding three months. 48 V. c. 9, s. 25.

Provisions as to setting apart waters for natural or artificial propagation of fish.

25. Nothing contained in this Act shall preclude the granting by the Commissioner of written permission to obtain fish and fish spawn, for purposes of stocking or artificial breeding, or for scientific purposes, subject always to any regulation or restriction made or prescribed by or under any lawful authority in that behalf. 48 V. c. 9, s. 26.

Commissioners may grant permission to obtain fish, etc., for certain purposes.

26. If any person without permission of the lessee or his representative, fishes, or employs or induces another person to engage or assist in fishing within the limits included in a fishery lease, or removes or carries away, or employs or induces

Penalty for fishing within limits of fishing lease without permission of lessee.

or assists another person to remove or carry away any fish caught within such limits, he shall not acquire any right to the fish so caught, but the same shall be forfeited and become the absolute property of the lessee, and such person shall therefor, and upon conviction thereof incur and pay a penalty of not less than \$5 or more than \$20 with costs of prosecution, and in default of immediate payment of such fine and costs shall be imprisoned in the common gaol of the county within which the offence was committed for a period not exceeding one month; and the lessee or any person by him authorized, and any Fishery Overseer, may upon his own view forthwith seize and remove any net, article or apparatus so used in fishing or to assist in fishing contrary to the provisions of this section, to be afterwards dealt with according to law; provided always, that the occupation of any fishing grounds or waters leased for the express purpose of net fishing, shall not interfere with nor prevent angling for other purposes than those of trade or commerce. 48 V. c. 9, s. 27.

Proviso.

Penalty for contravention of Act where no special penalty.

27. If any of the provisions of this Act or of any regulations made under the authority thereof by the Lieutenant-Governor in Council, are contravened and no other penalty is herein provided for such contravention, the person guilty of such contravention shall on conviction thereof incur and pay a fine of not more than \$20 with costs of prosecution, and in default of immediate payment of such fine and costs shall be imprisoned in the common gaol of the county within which the offence was committed, for a period not exceeding one month. 48 V. c. 9, s. 28.

Separate offences.

28. Contravention on any day of any of the provisions of this Act, or of any regulation made under the authority thereof by the Lieutenant-Governor in Council, shall constitute a separate offence, and may be punished accordingly. 48 V. c. 9, s. 29.

Provisions with respect to summary proceedings.

29. The following provisions shall have effect with respect to summary proceedings for offences, fines and penalties under this Act;

1. The information shall be laid within two months after the commission of the offence;

2. The description of an offence in the words either of this Act or of any regulations made by authority thereof, or in any similar words, shall be sufficient in law;

3. Any exception, exemption, proviso, excuse or qualification, whether it does or not accompany the description of the offence in this Act, or in any regulation made by authority thereof, may be proved by the defendant, but need not be specified or negatived in the information or complaint, and if so specified

or negatived, no proof in relation to the matters so specified or negatived shall be required on the part of the informant or complainant;

4. A conviction or order made in any matter arising under this Act, either originally or on appeal, shall not be quashed for want of form, and a conviction or order made by a court of summary jurisdiction, against which a person is authorized by this Act to appeal, shall not be removed by *certiorari* or otherwise, either at the instance of the Crown or of any private person, into the High Court, except for the purpose of the hearing and determination of a special case;

5. Whenever it shall appear to the satisfaction of the convicting magistrate that an offence against this Act or any regulation made thereunder has been committed in ignorance of the law, and that because of the poverty of the offender, the fine or penalty imposed would be oppressive, a discretionary power may be exercised;

6. Any Fishery Overseer or magistrate may upon his own view convict for any offence against the provisions of this Act, or of any regulation made thereunder, and shall instantly remove or cause to be removed and detain all materials and articles illegally in use;

7. Where any offence under this Act is committed in, upon, or near any waters forming the boundary between different counties or districts, such offence may be prosecuted before any magistrate or Fishery Overseer, for either of such contiguous counties or districts. 48 V. c. 9, s. 30.

30.—(1) One-half of every fine or penalty imposed by virtue of this Act shall belong to Her Majesty for the uses of the Province, and the remaining half shall be paid to the prosecutor, together with any costs which he may have incurred; every fine, penalty or forfeiture imposed by this Act, or by the regulations made thereunder, may be recovered on parol complaint before any Fishery Overseer or before any one of Her Majesty's Justices of the Peace in and for the county where the fine or penalty was incurred or the offence was committed or wrong done, and in cities, towns and villages in which there is a Police Magistrate, before such Police Magistrate, on the oath of one credible witness.

Application
of fines and
penalties.

(2) All materials, implements or appliances used, and all fish had in contravention of this Act, or any regulation made thereunder, shall be confiscated to Her Majesty for the uses of the Province, and may be seized and confiscated on view by any Fishery Overseer, or taken and removed by any person for delivery to any magistrate or Fishery Overseer, and the proceeds of disposal thereof may be applied towards defraying expenses incurred under the provisions of this Act; but nothing in this sub-section contained shall apply to any forfeiture of fish under the provisions of section 26 of this Act.

(3) The moiety of every fine or penalty belonging to Her Majesty for the uses of the Province, and all proceeds derived from the sale of articles confiscated to Her Majesty under this Act, shall be paid over to the Treasurer of the Province through the Department of Crown Lands, and shall be applied towards the expenses incurred in carrying out the provisions of this Act.

(4) Persons aggrieved by such conviction or confiscation may appeal by petition to the Commissioner, who shall have power to remit fines and restore forfeitures under this Act 48 V. c. 9, s. 31.

Certain Acts
to apply to
prosecutions
under this Act

31. Save where otherwise provided by this Act, all the provisions of the Act intituled *An Act respecting summary convictions before Justices of the Peace, and appeals to General Sessions*, shall apply to all prosecutions and proceedings under this Act, except in proceedings on appeal, and the practice and procedure upon and with respect to appeals and all proceedings thereon and thereafter, shall be governed by *The Act respecting the Procedure on Appeals to the Judge of a County Court from Summary Convictions*, so far as the same is not inconsistent with this Act. 48 V. c. 9, s. 32.

Reports to be
laid before
Legislative
Assembly.

32. Such annual or other reports of the Fishery Overseers as the Lieutenant-Governor from time to time directs, shall be laid before the Legislative Assembly. 48 V. c. 9, s. 33.

FISHERY REGULATIONS.

Copy of an Order-in-Council, approved by His Honour the Lieutenant-Governor, the 26th day of May, A.D. 1887.

Upon the recommendation of the Honourable the Commissioner of Crown Lands, the Committee of Council advise, that the accompanying regulations under the "Ontario Fisheries Act, 1885," be approved of and established by Your Honour.

Certified,

J. LONSDALE CAPREOL,

Asst. Clerk, Executive Council, Ontario.

The Honourable

The Commissioner of Crown Lands.

The Commissioner of Crown Lands has the honour to recommend to the Executive Council that the following regulations be made under "The Ontario Fisheries Act, 1885," namely:—

1. That leases granted for the purpose of conveying the fishing rights pertaining to public lands adjoining the rivers, streams and lakes of the Province, shall be for the depth of one chain inland from the water's edge.

2. Such leases shall be granted as far as practicable to responsible parties, able and willing to improve the lakes and rivers and guard them well. Applicants having in view the personal use and enjoyment of the fishing rights to be generally preferred to such as may offer higher rents with a view to farming or subletting the right to fish. Care to be taken that residents in the Province be allowed to enjoy a due proportion of the fishing rights.

3. That the valuation of the lands for rent shall be based on the character and condition of the rivers, streams and lakes which they adjoin, as made known to the Department of Crown Lands by reports of official inspectors or private individuals, all such reports to be considered confidential, and not to be communicated to other parties without the express authorization of the Commissioner of Crown Lands. Offers made by applicants for leases not to be communicated to other applicants.

4. That leases of lands made and granted under the provisions of "The Ontario Fisheries Act," shall not be held to convey the right to work any mine that may be found on such lands, or to cut any timber thereon.

5. That licenses and permits to fish shall be granted upon payment in advance of such fees as the Commissioner of Crown Lands may from time to time determine, and shall be valid until the close of the angling season of the year in which it is granted.

6. The excessive or wasteful fishing or killing of fish shall involve the cancellation of the lease, license or permit covering the waters in which it has taken place.

7. That it be obligatory upon any person who has no domicile in the Province of Ontario, and who desires to fish in the rivers, streams or lakes, under the control of the Province, to procure a permit or license to that effect from the Commissioner of Crown Lands before beginning to fish.

8. That no person shall, except under authority of a fishery lease, fishing license, or permit, fish for, catch or kill any fish in any inland lake, river or stream adjoining the ungranted lands of the Province.

9. That no person shall, without lawful authority, fish for, catch or kill, by any device or means, any fish during their spawning time, or disturb or destroy their spawn or spawning-beds.

10. That it shall not be lawful to fish for, catch or kill, brook trout, salmon trout, white fish, bass, pike, pickerel, maskinonge, tulibee, grayling, herring or perch, in any inland lake, river or stream under the control of the Province, by any device or means other than by hook and line or angling, except in waters leased or licensed for the express purpose of net fishing.

11. That it shall not be lawful to use any explosives, or chemical material, or compound, for the purpose of killing or catching fish.

12. That fishing by torchlight, or other artificial light, placed in or above the water is prohibited.

13. That no person shall fish for, catch, kill, buy, sell, or have in possession any fish at times when the taking or killing of fish is prohibited by lawful authority.

14. That parties holding leases under the provisions of "The Ontario Fisheries Act," shall not have any recourse against the Government of the Province for any hindrance to their use and enjoyment of the fishing rights pertaining to the lands leased, by the operation of any law enacted or that may be hereafter enacted by the Parliament of Canada, or by any action of the Government of Canada, or any person employed thereunder.

15. It shall not be lawful to use or set in any of the inland rivers, streams, or water courses within the Province, any net, rack, trap, weir, or obstruction for the purpose of catching fish, or whereby the free passage of fish up and down the same may be obstructed or prevented.

16. The catching, killing, or molesting of fish when passing or attempting to pass through any fish-way or fish-pass, or in surmounting any obstacle or leaps, the use of any invention to catch, kill or molest fish in the mill-heads, and water-courses appurtenant thereto, are hereby forbidden.

17. It shall not be lawful to put into any waters in any inland river, stream or lake in the Province where fish are taken, any offal, blood, putrid brine, putrid fish, or other deleterious substance, and all fish, offal, or filth of any description whatsoever accruing from the catching and curing of fish, shall be burned or buried twenty yards distant from the water's edge of said river, stream or lake

Close Seasons.

It shall not be lawful to fish for, catch, kill or have in possession :

Speckled Trout, between the 15th September and the 1st May.

Pickerel (Doré), between the 15th April and 15th May.

Bass and Maskinongé, between the 15th April and 15th June.

White Fish and Salmon Trout, between the 1st November and 30th November.

T. B. PARDEE,
Commissioner of Crown Lands.

Department of Crown Lands,
Toronto, 5th May, 1887.

GAME AND FISH LAWS OF ONTARIO.

TABLE OF CLOSE SEASONS.

GAME.

NAME.	DATE.	REMARKS.
1. Deer	From 20th November to 15th October.	
2. Moose, Elk, Reindeer or Caribou.	From 20th November to 15th October.	<p><i>No Moose, Elk, Reindeer or Caribou shall be hunted, taken or killed until after 15th October, 1895.</i></p> <p><i>Deer, Moose, Elk, Reindeer or Caribou shall not at any time be taken or killed for export out of Ontario.</i></p> <p><i>A person who is not an actual resident of Ontario or Quebec shall not hunt or kill any kind of deer, prior to 1895, unless he has obtained a permit from the Commissioner of Crown Lands. The fee is \$10, and the permit is good for a year.</i></p> <p><i>No one person shall during any one year prior to 1895, take or kill more than five deer.</i></p> <p><i>Deer, Moose, Elk, Reindeer or Caribou shall not be trapped or snared. Hounds shall not be allowed to run at large where deer are usually found from 15th November to 15th October.</i></p>
3. Grouse, Pheasants, Prairie Fowl or Partridge.	From 1st January to 1st September.	
4. Quail or Wild Turkeys.	From 15th December to 15th October.	Partridge or Quail shall not at any time be taken or killed for export out of Ontario.
5. Woodcock	From 1st January to 15th August.	The sale of Quail is prohibited until 15th October, 1892.
6. Snipe, Rail & Golden Plover.	From 1st January to 1st September.	The eggs of any of the birds herein mentioned shall not be taken or destroyed at any time.
7. Swan or Geese	From 1st May to 1st September.	None of the birds mentioned shall be trapped or snared, and Swans, Geese or Ducks shall not be killed by batteries, swivel guns or sunken punts.
8. Ducks of all kinds and all other water-fowl.	From 1st January to 1st September, and at any time of the year between one hour after sunset and one hour before sunrise.	
9. Hares	From 15th March to 1st September.	
10. Beaver, Mink, Muskrat, Sable, Martin, Otter or Fisher.	From 1st May to 1st November.	

FISH.

NAME.	DATE.	REMARKS.
1. Speckled Trout.....	From 1st November to 30th November.	Net fishing is prohibited except under leases or licenses.
2. Pickerel (Dorè).....	From 15th April to 15th May.	The use of explosives or chemical material for killing or catching fish is illegal.
3. Bass and Maskinongè.	From 15th April to 15th June.	Fishing by torchlight or other artificial light is prohibited.
4. Whitefish.....	From 1st November to 30th November.	Persons who do not reside in the Province must procure from the Commissioner of Crown Lands a permit or license before beginning to fish—the fee is \$5, and the permit shall be good till the end of the angling season of the year in which it is granted.
5 Salmon Trout.....	From 1st November to 30th November.	

LIST OF OVERSEERS.

NAME.	ADDRESS.	DISTRICT.
William McKirdy.....	Nepigon	River Nepigon, Lake Nepigon and adjacent waters.
Joseph Whalen.....	Port Arthur.....	Thunder Bay.
John H. Wilmott	Beaumaris.....	Muskoka.
Francis J. Moore	Lakefield... ..	Counties of Victoria, Peterborough and Haliburton.
Norman Clarke	Mississippi Station.....	County of Lanark and north parts of Frontenac and Addington.
John J. Little.....	Day Mills.....	Part of Algoma between Garden River Reserve and the Township of Long.
Samuel R. McKewen....	Tehkumah	Manitoulin Island.
Benjamin McDermott..	Sundridge	Parry Sound.
Robert R. Smith.....	Eganville	County of Renfrew.

The following Bill amending the foregoing Act for the Protection of the Provincial Fisheries was passed by the Ontario Legislature on 14th April, 1892, subsequent to the receipt of your Commissioners' report.

CHAPTER 10.

An Act for the Protection of the Provincial Fisheries.

HER MAJESTY, by and with the advice and consent of the Legislative Assembly of the Province of Ontario, enacts as follows:—

1. This Act shall apply only to fishing in waters, and to waters over or in respect of which the Legislature of this Province has authority to legislate for the purposes of this Act. Application of Act.

2.—(1) "Water or waters," or "Provincial water or waters" shall mean and include such of the waters of any lake, river, stream or water course wholly or partly within the Province as flow over or cover any Crown lands and over or in respect of which the Legislature of this Province has authority to legislate for the purposes of this Act. Interpretation "Waters."

(2) "Crown lands" shall mean and include such ungranted lands of the Crown or public lands or Crown domain as are within and belong to the Province of Ontario and whether or not any waters flow over or cover the same. "Crown Lands."

(3) "Fish" shall mean and include every kind, species or variety of fish in respect of the catching or killing of which within the Province the Legislature has authority to legislate. "Fish."

(4) The word "bass" where used herein shall mean and include black bass and Oswego or large mouth bass. "Bass."

3. The words "the close season" when used herein shall mean and include the time in any year during which fishing for, catching or taking in any Provincial water, or killing, carrying away or buying or selling or having in possession the kind or species of fish hereinafter named, or any of them, is prohibited, or regulated by the laws or fishing regulations of Canada. "Close season."

4. The word "tourist" or "summer visitor" when used in this Act shall include all persons who may, during the spring, summer or autumn months be temporarily visiting, boarding or lodging in any locality at a distance of over five miles from their usual place of residence in other parts of the year. "Tourist," "summer visitor."

5. No tourist or summer visitor shall take or catch or kill in any Provincial water or carry away a greater number than one dozen bass caught or taken in such waters upon any one day. Number of bass which may be killed in one day.

Person catch-
ing small bass
to return same
to water.

6. Any summer tourist who shall take or catch in such waters bass of less than 10 inches in length, shall forthwith return the same to the water without unnecessary injury.

Number and
weight of
trout which
may be killed
in one day.

7. No person shall take or catch or kill in any Provincial waters or carry away a greater number than fifty speckled or brook trout on any one day, or more speckled or brook trout than in the aggregate weigh more than fifteen pounds, on any one day.

Person catch-
ing small
trout to re-
turn same to
water.

8. No person shall in such waters kill or retain or carry away any speckled or brook trout of less than five inches in length. But when any such trout of a length less than five inches shall be taken or caught, the same shall be forthwith returned to the water by the person taking or catching the same, without unnecessary injury.

Certain fish
to be caught
with hook and
line only.

9. No person shall at any time fish for, catch or kill speckled trout or brook trout, bass, pickerel (doré), maskinonge or muscallonge in such waters by other means than angling by hook and line in such waters.

Use of certain
snare and
nets pro-
hibited.

10. No person shall take, catch or kill from or in such waters lake trout, salmon trout, whitefish, sturgeon or any other kind of fish which inhabit said waters, or attempt so to do, with any kind of net, seine or snare, rack, trap or weir, or night or set line, or fish in any such inland waters therewith for other kinds of fish without first having obtained a license, signed by the Commissioner of Crown Lands or by one of the Game and Fish Inspectors or by a fishery overseer duly authorized to grant such license, under a penalty for the first offence of not less than \$10 or more than \$50, and for a second or subsequent offence of not less than \$20 or more than \$100. But this section shall not apply to mullet or suckers or pike while they are running.

Fish not to be
taken in mill-
heads, etc.

11. No person shall catch, kill or molest fish in such waters when passing or attempting to pass through any fishway or fish-pass, or when surmounting any obstacle or leaps, nor use any invention to catch, kill or molest fish in the mill-heads and watercourses appurtenant thereto.

Use of ex-
plosives in
fishing pro-
hibited.

12.—(1) No person shall use dynamite or any other explosive or any poison for the purpose of destroying or taking fish in or from said waters, under a penalty of \$100 and two months' imprisonment in the county or district gaol for each offence.

(2) No person shall use lime or other injurious substance for the purpose of injuring, killing or taking fish in or from said waters, under a penalty of \$50 and imprisonment not exceeding three months in the county or district gaol in default of payment.

13.—(1) No person shall fish for, catch, take or kill in such waters any kind or species of fish during the "close season," as by law or regulation the same is fixed or determined for or in respect of that particular kind or species of fish, or buy, sell or have in his possession at any time after the expiration of five days from the beginning of the close season in any year any of such kinds or species of fish caught in such waters under a penalty of not less than \$10 nor more than \$30, and a further penalty of \$1 for each fish so caught or taken or found in possession after the expiration of such five days.

Penalty for fishing during close season.

14.—(1) The Lieutenant-Governor-in-Council may be regulated provide for the issue of licenses, free of charge, to frontier settlers in any of the said districts or in any new part of the Province, or to any Indians residing on any reserve, or to any band of Indians residing on a reserve, to take fish in such waters other than speckled or brook trout or black or other bass, by net or night or set line with not more than five set lines, exclusively for use and consumption by their own families, and any settler or other person to whom such license is issued who shall sell or barter fish caught under such license shall be subject to a penalty and to forfeiture of his license.

Licenses to settlers and Indians to use night lines, etc.

(2) Provided nevertheless that nothing herein contained shall prejudicially affect any rights specially reserved to or conferred upon Indians by any treaty or regulation in that behalf made by the Government of Canada nor shall anything herein apply to or prejudicially affect the rights of Indians in any portion of the territory of the Province as to which their claims have not been surrendered or extinguished.

15. The Fish and Game Commissioners who may be hereafter appointed shall have a general oversight or supervision over the fisheries of the Province, subject to any existing Acts of the Legislature, and to such regulations as shall from time to time be made by the Lieutenant-Governor in Council. But nothing herein contained nor the appointment of such Commissioners or the assignment of duties to them shall abrogate or interfere with the powers and authority conferred upon the Lieutenant-Governor or the Lieutenant-Governor in Council or the Commissioner of Crown Lands by the *Ontario Fisheries Act*.

Fish and game commissioners to have supervision of fisheries.

Rev. Stat. c. 32.

16. Subject to such regulations, such Commissioners shall examine or cause to be examined dams and all other obstructions existing in rivers and streams flowing over or upon the lands of the Crown, and prescribe the necessity of fishways and the location, form and capacity thereof, examine into and report upon the best methods of introducing and disseminating valuable species of fish into waters where they do not exist, and of protecting and increasing the production of such valuable species as are to be found in the waters

Powers and duties of commissioners.

of the Province, and may cause experiments to be made and spawn to be placed in suitable waters, and may re-stock streams with fish suitable for food, and may take and employ such means for the purposes aforesaid as may be required by such general regulations, and as shall be approved by the Lieutenant-Governor.

Commissioners to direct prosecution and to report.

17. Such Commissioners shall also examine into the workings of the fishery laws and direct prosecutions of offences against the same and report annually to the Lieutenant-Governor and perform any other duties which may be prescribed by law or regulations.

Property in fish artificially propagated.

18. Fish artificially propagated or maintained shall be the property of the person propagating or maintaining them, and sections 5 to 10 inclusive of this Act shall not apply thereto.

Fishing in private waters without permission

19. Whoever without permission of the proprietor fishes in that portion of a pond, stream or other waters in which fish are lawfully cultivated, owned and maintained by a private owner, or lessee shall render himself liable to a fine of not less than \$5 and not more than \$20, and to a further penalty in each case of \$1 for each fish so taken.

Fish taken for scientific purposes.

20. The Commissioners may take or cause to be taken fish at any time and in any manner for purposes connected with fish culture or scientific observation.

Penalties.

21. Any violations of the provisions of sections 5, 6, 7, 8, 9, 11 or 14 of this Act, or any other section to which no specific penalty is attached, shall subject the offender to a penalty of not less than \$10 or more than \$30, to be recovered upon summary conviction.

Who may be prosecutor or complainant

22. Any person may be the prosecutor or complainant in prosecutions under this Act, and it shall be the duty of every fishery overseer and fire and wood ranger, constable and peace officer to aid in the observance of the provisions of this Act and in bringing offenders to justice.

Committal upon non-payment of fine.

23. In default of the payment of any penalty imposed by this Act and costs by any person convicted of any offence under this Act, the offender may be committed to the common gaol of the district or county where the offence was committed for a period not exceeding three months, unless the penalty and costs and the costs and charges of the commitment and carrying the defendant to prison are sooner paid, and the amount of such costs and charges of commitment and carrying the offender to prison are to be ascertained and stated in the warrant of commitment.

Evidence.

24. Upon the hearing of any information or complaint exhibited or made under this Act, the person giving or making the information or complaint shall be a competent witness,

notwithstanding such person may be entitled to part of the pecuniary penalty on the conviction of the offender, and the defendant shall also be a competent and compellable witness.

25. All prosecutions for the punishment of any offence under this Act, for which offence the penalty does not exceed the sum of \$30, and imprisonment or imprisonment at hard labor in default of payment thereof and of the costs may take place before any fishery overseer, stipendiary or police magistrate, or one or more of Her Majesty's Justices of the Peace having jurisdiction in the county or district in which the offence is committed. Who may hear and determine complaints where penalty is less than \$30.

26. All prosecutions for the punishment of any offender under this Act other than those in the next preceding section mentioned, may take place before any stipendiary or police magistrate, or any two or more of Her Majesty's Justices of the Peace having jurisdiction in the county or district in which the offence is committed, or before any one of such justices and any fishery overseer. In other cases.

27. Complaints or informations under this Act may be laid within three months from the date of the commission of the offence. Limitation of prosecutions.

28. One-half of every fine or penalty imposed by virtue of this Act shall belong to Her Majesty and may be devoted towards paying the expenses incurred in carrying out the provisions of this Act, and the other half thereof when collected shall be paid over to the prosecutor or informant, together with any costs which he may have incurred and which may be collected. Application of fines and penalties.

29. All materials, implements and apparatus used, and all fish had or taken in contravention of this Act or any regulation made thereunder, may be seized and confiscated to Her Majesty for the use of the Province by any fishery overseer, on view or taken or removed by any other person for delivery to any magistrate or overseer, and the proceeds thereof may be applied to defraying the expenses incurred under this Act. Fish taken or instruments used unlawfully to be forfeited.

30. Save where otherwise provided by this Act, in so far as they are applicable, the provisions and forms of the Act entitled *An Act respecting summary convictions before Justices of the Peace* shall apply to prosecutions and proceedings under this Act except in proceedings on appeal and the practice and procedure upon and with respect to appeals and all proceedings thereon and thereafter shall be governed by the "*Act Respecting the Procedure on Appeals to the Judge of a County Court from Summary Convictions*," and no other appeal shall be had or shall lie save under the Act last aforesaid. Procedure on prosecutions. Rev. Stat. c. 75.

INTERNATIONAL CONFERENCE.

Having heard early in the year, that a Special Commission had been issued by the State of New York to codify the Fish and Game Laws of that State, your Commissioners put themselves in correspondence with the members of the above mentioned Special Commission, with a view to arranging a joint meeting, at which the matter of the assimilation of the Game and Fish Laws of the States and Provinces bordering upon one another, could be discussed.

Acting upon the suggestion contained in the appended letter :

COURT HOUSE,

HAMILTON, ONTARIO,

Jan. 17th, 1891.

Hon. Richard U. Sherman, Utica, N. Y. :

DEAR SIR,—I notice from paragraphs in various American papers that the Game Commission of New York State is about to report and recommend a bill drafted for the purpose of codifying the Game laws.

I write this note to inform you that a Fish and Game Commission has just been issued by the local government in the Province of Ontario to inquire into the best manner of preserving the game in the Province, and strictly enforcing the laws. Would you kindly let me know as soon as possible whether your Commission has yet reported? If it has done so I should take it as a very great favour if you would send me a few copies of the report or proposed bill. If, on the other hand, no report has yet been made, and the Commission intends to have a final meeting, would it be possible to arrange for an interview between your board and ours, for the purpose of discussing reciprocal legislation in the matter of Game and Fish protection, and also to give us an opportunity of enquiring thoroughly into your laws? The which, I need not say, would be of the highest advantage to us.

Yours truly,

A. D. STEWART,

Secretary Ontario Game and Fish Commission.

Senator McNaughton introduced this resolution in the Assembly :

Resolved, If the Assembly concur, that the Commission appointed in pursuance of Chapter ninety-nine of the Laws of the State of New York of eighteen hundred and ninety, consisting of Gen. R. U. Sherman, Hon. Robert B. Roosevelt and Hon. Edward G. Whittaker, for the purpose of revising and codifying the game and fish laws of the State of New York, be continued until such time as will enable them to confer with the Fish Commission which has been appointed

by the Province of Ontario, and also with the Commission of Fisheries of Canada, for the purpose of procuring uniform legislation covering the fisheries over the waters between the State of New York and the Dominion of Canada.

But nothing in this resolution shall prevent the presentation to the legislature of the report and bill already prepared by the said Commission of the State of New York.

After some correspondence, a meeting of the special Commissioners appointed by the Provinces of Ontario and Quebec, and the State of New York, together with others interested in the fisheries of the great lakes, was held at the Fifth Avenue Hotel, New York City, October 12th, 1891.

Hon. Robert B. Roosevelt of New York was made Chairman, and Mr. A. D. Stewart of Hamilton, Ontario, Secretary.

Present:

Robert B. Roosevelt, Richard U. Sherman, E. G. Whittaker, Special Fish Commission, New York.

G. A. MacCallum, A. D. Stewart, Game and Fish Commission Ontario.

Henry C. Ford, Fish Commission, Pennsylvania.

H. M. Smith, Fish Commission, United States.

J. W. Gregory, Game and Fish Commission, Quebec.

Frank J. Amsden, Secretary Cheaper Fish Food Association of New York.

Geo. H. Welshons, Special Fish Commissioner, Pittsburg, Pa.

G. M. Skinner, Anglers' Association, St. Lawrence River.

G. H. Sturgh, Anglers' Association, St. Lawrence River.

L. D. Huntington, New York Fish Commissioner.

E. J. Blackford, New York Fish Commissioner.

L. P. Doyle, New York Fish Commission.

The Chairman stated the object of meeting, and after some discussion, on motion of Gen. R. U. Sherman of New Hartford, N.Y., it was decided that the matter of the "Protection, Preservation and Propagation of Food Fish in the Great Lakes," should be referred to the following committee:

H. M. Smith, Washington, D.C., representing the U. S. Fish Commission.

Dr. G. A. MacCallum of Dunnville, Ontario, Chairman Ontario Game and Fish Commission.

Henry C. Ford of Philadelphia, member Pennsylvania Fish Commission.

Henry Burden of Troy, N.Y., member of New York Fish Commission.

Hon. R. U. Sherman of New Hartford, N.Y., member of New York Special Fish and Game Codification Commission.

Frank J. Amsden of Rochester, N.Y., Secretary Cheaper Fish Food Association of New York.

James A. Henshall of Cincinnati, Ohio, member of Ohio Fish Commission.

Dr. J. C. Parker of Grand Rapids, Mich., member of Michigan Fish Commission.

J. W. Gregory, member of Quebec Game and Fish Commission.

Philo Dunning of Madison, Wis., member of Wisconsin Fish Commission.

N. K. Fairbanks of Chicago, Ill., member of Illinois Fish Commission.

Wm. Bird, Fairmount, Minn., member of Minnesota Fish Commission.

It was arranged that the Committee should meet in Rochester, N.Y., at the Chamber of Commerce, Tuesday, Nov. 10th, at 10 a.m., to consider and formulate a report to be made to a meeting to be called by the Chairman, Mr. Roosevelt. The committee were given authority to add to their number if thought advisable, and the individual members to send substitutes if unable to attend. Immediately after adjourning, the members of the above committee met and elected Hon. R. U. Sherman their Chairman, and Frank J. Amsden, Secretary.

MEETING OF COMMITTEE IN ROCHESTER, NOV. 10TH, 1891—At the rooms of the Chamber of Commerce.

The meeting was called to order by Hon. Richard U. Sherman, Chairman. Roll called by F. J. Amsden, Secretary.

Present:

Richard U. Sherman, Special New York Fish Commissioner.

A. D. Stewart, Ontario Game and Fish Commissioner.

Henry C. Ford, Pennsylvania Fish Commissioner.

Louis Strenbor, Pennsylvania Fish Commissioner.

Hoyt Post, Michigan Fish Commissioner.

H. M. Smith, U. S. Fish Commissioner.

F. J. Amsden, Cheaper Fish Food Association, Rochester.

Letters were read from the following who could not attend:

J. C. Parker, Michigan Fish Commissioner.

Henry Burden, New York Fish Commissioner.

N. K. Fairbanks, Illinois Fish Commissioner.

Philo Dunning, Wisconsin Fish Commissioner.

There were also present the following:

Hon. Geo. F. Danforth, Hon. H. S. Greenleaf, Hon. Donald McNaughton, Hon. Charles S. Baker, W. F. Cogswell, of the Cheaper Fish Food Association of New York.

R. P. Grant, W. H. Thompson, Hon. E. B. Bulkey, Joseph L. Luckey, H. S. Folger, G. M. Skinner, of the Anglers' Association, St. Lawrence River.

Monroe Greene, Supt. Caledonia Hatchery, James Annin, Jr., Caledonia.

The minutes of last meeting were read and approved.

Mr. SHERMAN : The chair notices present here a gentleman who has been very vigorous in the fish interests, propagation and culture, and who has well represented their interests in the legislature—Senator McNaughton of Monroe County—and the chair suggests to the meeting the propriety of his participating in the discussions of the meeting. The chair also notices the gentlemen from the St. Lawrence Anglers' Association—Messrs. Skinner, Thompson and Grant—the chair makes the same suggestion in regard to them. Is there any objection to their acting as advisory members of this committee? Mr. Folger of Kingston is also present and it is moved that he be invited also to participate in the discussions; and Judge Danforth, lately of the Court of Appeals is also included in this request. These gentlemen will be considered advisory members of the committee, if there is no objection, and the chair hears none. (Carried.)

CHAIRMAN'S ADDRESS.

The Chairman (Gen. SHERMAN) said :

In entering upon our business as a committee, it is proper that the chairman should state the circumstances which have called us here.

In the winter of 1891 a Commission was appointed by the Government of the Province of Ontario to confer with a Commission from the State of New York with reference to an agreement upon a uniform system of fish laws, applying to the international waters between the State of New York and Canada.

In the year previous, a Commission appointed by the Legislature of the State of New York for the purpose of revising and codifying the laws of that state for the protection of Fish and Game, had been several months in session. They had given to the various interests involved, exhaustive hearings and close study, and had perfected a code which, in their judgment, fully meets the needs of the case.

This code was, by the requirements of the law, to be reported to the legislature on or before the 15th of January. It was completed before the date required, and reported at the first meeting of the legislature that occurred thereafter. After the report had been thus completed, a communication was received from the Ontario Commission, stating their desire for a conference. The term of office of the New York Commission having expired by the completion of the work assigned to them, a joint resolution introduced by Senator McNaughton, was passed by the two houses, continuing the term of the Commission until such time as would enable them to confer "with the Fish Commission which has been appointed by the province of Ontario, and also with the Commission of Fisheries of Canada for the purpose of procuring uniform legislation covering the fisheries over the waters between the state of New York and the Dominion of Canada."

Under this authority the New York Commissioners held a correspondence with the purpose of fixing upon a time and place for a joint meeting. Finally it was agreed that the conference should be held at the Fifth Avenue Hotel in the city of New York on Thursday, the 22nd of October last.

At that time and place appeared the New York Commissioners, Messrs. Sherman, Roosevelt and Whittaker, Messrs. MacCallum and Stewart, the Commissioners from Ontario, and Mr. Gregory representing the Fish Commission of Quebec.

There were also present by invitation of the members of the Commission, Messrs. Ford and George H. Welshons, Pittsburg, and Louis Strubler, Erie, representing the Fish Commission of Pennsylvania; Dr. H. M. Smith of the United

States Fish Commission; Mr. F. J. Amsden, representing the Cheap Fish Food Association of Western New York, and Mr. G. M. Skinner, representing the St. Lawrence Anglers' Association. All of these gentlemen having the deepest interest in the objects of the conference and qualified by long experience to give useful counsel and aid in the practical work.

No plan or programme had been fixed upon previous to the meeting for the conduct of its proceedings, nor could such a plan have been settled in advance.

After a discussion of the situation, it was deemed wise to delegate to a committee the detail work of the conference, and to change the place of meeting to some point on the border where the sessions might be attended with the least inconvenience. So the committee here present was appointed and is now ready to hold its first session.

It will be seen from the facts stated that the only power given to the New York Commission is to confer with the Canada Commissioners with reference to securing uniform legislation in the two countries. This is the first business of the committee.

There are members of the Commission who may wish to go farther than this, and to take up subjects, which, though not in the direct line of its jurisdiction, have an incidental connection with it.

There can be no objection to the committee, as a volunteer body, taking up such subjects and making recommendations regarding them.

The time is auspicious for considering such subjects. It is not probable that a body representing so many separate State Governments and so well qualified to conduct all the interests of Game and Fish preservation can soon be assembled again. And if nothing more shall be accomplished than the awakening of the public attention to these interests, the members of this Committee may feel that their labours have not been wasted.

The CHAIR calls attention to the circular letter which has been sent by Mr. Amsden, the Secretary, with the approval of the President, suggesting topics for consideration; and with the consent of the Committee he will ask that any members of the committee, including of course, the gentlemen present by invitation, may present their views in regard to these topics or any others properly connected with them. To-day's session may be spent properly in such discussion. After that, the Committee will be reasonably prepared to settle down to its proper practical work.

The Secretary will read the subjects suggested in the circular.

Copy of Circular Letter.

ROCHESTER, N. Y., Oct. 24th, 1891.

DEAR SIR,—By the enclosed you will see that you are one of a committee to meet at Rochester, N. Y., in the Chamber of Commerce Rooms, on Tuesday, November 10th, at 10 a.m. to consider and formulate a report on the subject of fish food of the great lakes to be submitted to a meeting of the special Commissioners of the several States and Canada. Kindly make an effort to attend, and come prepared to give us your careful thought and judgment how to attain the desired object: the preservation and increasing the food-fish of the great lakes.

The following subjects will no doubt come up :

PROTECTION FOR WHITEFISH.

- " Should inshore fishing be stopped ?
- " What distance ?
- " What kind of nets should be permitted ?
- " Pound nets or gill nets ?
- " What size of mesh ?
- " Is it necessary to have a close season ?
- " What month ?
- " Would a license system be an advantage ?
- " Should some restriction be made on number of nets for space of water ?
- " Should a limit be put on size of fish marketed ?
- " What method should be adopted for enforcing laws and regulations ?
- " Can uniform laws and regulations be made by all the States and Canada ?"

THE SAME AS ABOVE as applied to

LAKE TROUT AND PIKE.

Another question that will be brought up for consideration. After the several States and Canada have enacted good protection laws and regulations and provided efficient means for their enforcement, then for the several State Fish Commissions to devote their whole attention, energies, and appropriations to the inland lakes and streams. Leaving the great lakes (being international waters) to the care of the two governments (Canada and United States). By this course would not greater results be arrived at.

The American Fishing Society at their annual meeting thought so for they passed the following unanimously :

" Whereas, the object of the American Fisheries Society, is not only to foster the Game Fish of the country, but to do everything in its power to cheapen the cost of fish-food, and

Whereas, the great lakes, a vast body of water on our northern border, is an international water, lying between us and a foreign country, and

Whereas, the work of protection and propagation of fish in these waters is being conducted by the several States and Canada, each independent of the other, with slight probabilities of ever arriving at a harmony of action, and

" Whereas, the Federal Government, with its great scientific, mechanical and financial resources, its power to make agreements, can undertake this work with far greater results ; therefore, be it

" *Resolved*, That we respectfully petition and urge on Congress the importance and duty of their assuming this work ; that speedy action be taken to se-

cure uniform laws with Canada, and, when done, that ample appropriations be made for their enforcement, and also for the propagation and planting of food-fish in said waters."

This will show how important this meeting can be made, and it is therefore hoped that every State will be represented, and that all will come prepared to discuss and act.

Yours truly,

(Signed) RICHARD U. SHERMAN

Chairman.

CHAIRMAN: If any gentleman wishes to be heard on these topics, there is a present opportunity.

MR. AMSDEN suggested that a letter be read from Mr. Philo Dunning of Wisconsin.

CHAIRMAN: The letter will be read.

STATE OF WISCONSIN, COMMISSIONERS OF FISHERIES.

MADISON, Wis., Nov. 2nd, 1891.

Mr. F. J. Amsden, Secretary, &c., Rochester, N.Y.

DEAR SIR,—I have the honour to acknowledge the receipt of yours of the 24th ult. I beg to say that *I and my colleagues are in sympathy with those participating in any meeting that may be conducive to harmony in action of the different states upon the question and all questions that is to be or may be presented for thought and action.*

The subject of "Fish Food of the Great Lakes" and questions incident to or correlative with it are matters of very general importance—much more so than might appear at first blush, —and very difficult if not impossible of rational treatment in a general way.

In giving somewhat crude opinions upon the matter suggested in your circular letter, I deem it the better, more intelligent way to take up the subjects *seriatim*.

1st. Should inshore fishing be stopped, and at what distance? I should dislike to venture an opinion at this distance, for to do so would be at a great disadvantage.

2nd. What kind of nets should be permitted—pound or gill? The laws of Wisconsin, and a change in which I see no reason at this moment, are as follows:

SECTION 1. It shall be unlawful after the passage of this act, for any person, for himself or for others, to set, in the waters of Lake Superior or any bays thereof being within the boundaries of this state, any trap, fyke, float, net or seine whose mesh is less than three and one-half inches stretch measure, or one and three-quarters inches bar measure, or any pound net, the back and two opposite sides of the pot thereof whose mesh is less than three and one-half inches stretch measure, or one and three-quarter inches bar measure.

3rd. Is it necessary to have a close season, and what months? In answer to this question I should say from experience and observation, yes, unless the supply be replenished every year, and even then I should be in favour of it, with severe penalties for catches during spawning season. Fish caught during spawning period are not palatable, and by the necessarily immense waste and destruction of spawn the work of the different Commissioners while not rendered nugatory are very materially injured in results, and I venture to suggest here, although perhaps not an opportune point, that where Commissioners have no houses, the fry might be impregnated on the water at the time and place of making the catch.

4th. Would a license system be an advantage? It seems to me there can hardly be any but an affirmative answer to it. This country being a free country, and our system of taxation supposed to be uniform, and many of the fishermen being of slender means, license should not be excessive so as to become onerous, creating a monopoly, and thus shut out poorer or middle classes. The power to license should be asserted, and the absence of a license when its production is required should be *prima facie* evidence of its non-existence and the guilt of the accused. These licenses should be issued and charges for them collected by the warden or other properly designated officials. A register of these, properly kept would also be valuable in the obtaining of statistics and possibly lead to the detection of violators of the statutes.

5th. Should some restrictions be made on number of nets for space of water? To this I should say no, as it is undemocratic. Our great lakes being great highways, let all take their chances untrammelled by any restrictions except those tending to increase supply, and thereby the opportunity for remunerative labour.

6th. Should a limit be put on size of fish marketed? I should say yes, and let the punishment be confiscation of the entire package, keg or barrel in which the size prohibited is discovered.

7th. What method should be adopted for enforcing laws and regulations? This it seems to me is a matter for the Legislatures of the several states.

8th. Can uniform laws and regulations be made by all the States and Canada? One can readily discern the advantage of such a uniformity, as it would lead to uniformity of decision, probably, in legal questions, but cannot be answered any more readily.

If I may be pardoned the digression, I would like to say, in connection with matters under discussion, that I think it would be advisable in order to save any and all questions that might arise as to State authority and jurisdiction, that it would tend to great and general benefit to formulate at your session, for introduction at the December session of Congress and secure its enactment into law, a bill giving, as far as may be necessary, to the several States bordering upon the Great Lakes, authority to protect the results of the work of their Commissioners, and authority to protect the fishing interests, with, of course, proper restrictions, protecting alike the single person as well as the corporate interests engaged therein. I suggest herein, the employment of a suitable person at a fair compensation, to be borne share and share alike by the Commissions participating in your meeting, to attend the next session of Congress and secure the passage of such legislation as may be considered by you, after discussion, necessary. This could be supplemented by resolutions adopted by the different State Commissions and by letters written personally to your several Senators and members of the House, and it would also be a valuable aid in securing this legislation, for the

different State Commissions to designate one of their number to meet in Washington at some time designated at your present meeting or leave the time to some committee to be appointed by you for the purpose.

I very much fear that it is probable that neither myself or any of my colleagues will be able to be in attendance. It is unnecessary to give any assurance of the interest of our Commission in your deliberations, and if it be not asking too much, I would ask you to read the enclosed paper and to also communicate to me at your leisure a *resumé* of the deliberations of your meeting.

I remain, very truly yours,

(Signed) PHILO DUNNING,
President Wisconsin Fish Com.

Senator McNAUGHTON: Mr. Chairman, I would like to ask if there is any doubt about the power of the State to protect fishing along the lake and shore.

CHAIRMAN: The State has ample power and the Courts have so decided.

Mr. STEWART then spoke as follows:—

Mr. Chairman:

I am very glad indeed to be here to-day, and I have to apologize for the absence of Dr. MacCallum, the chairman of our Ontario Game and Fish Commission. He was called, unfortunately, this morning to Toronto on important business in connection with the Commission which I represent, and was unable to be here; and it has been left to me unfortunately, very unworthily to fill his place.

The chairman has outlined to you very succinctly, the steps by which this meeting came to be called. The establishment of our Fish and Game Commission in Ontario was forced upon the Government by reason of public opinion, and the representations made by sportsmen in Ontario to the effect that if something was not done very quickly, the Fish and Game in our Province would be totally destroyed and eliminated, and what had been for years past the sportsmen's paradise, known all over the world, and furnishing Fish and Game in abundance, supplying cheap food for the fishermen, game for the sport-man, and bringing in a revenue for the people, would soon be no more. The Government therefore appointed a Commission of ten members, who sub-divided and went through the Province making inquiries on the subjects of Fish and Game, with a view of recommending to the local government at Toronto such measures as they thought fit, in consequence of the inquiries made by them through its authority. We heard, fortunately, that the Chairman and his colleagues had been appointed by the State of New York to codify the fish laws, and we were not slow to put ourselves in communication with them, in hope that a meeting might be arranged, and this, as the Chairman says, is the outcome of our correspondence. I am sorry somewhat, to find that this meeting is going to confine itself solely to the Fish question, because as I said, our Commission is a Game and Fish commission. However, the Fish question, as a food supply, is so very important that perhaps it is just as well to consider it alone and consider it thoroughly, and then take some other opportunity to consider the Game question.

I do not know what Dr. MacCallum, our Chairman, would have said had he been here to-day, in answer to the questions which Mr. Amsden has so carefully prepared ; and as I was only telegraphed to come here at the eleventh hour, I have hardly given them sufficient thought, perhaps, to warrant my saying much on the matter ; but I have no hesitation in saying this, that the people of Ontario and the government of Ontario are determined that the loose state of affairs which has prevailed in the past has got to end, and that something has got to be done with a firm hand towards protecting the fish industry, and taking such steps as may be necessary to give the people cheaper food in the way of fish, and also continuing the large revenue which has always accrued on account of the visits of the American and English sportsmen who come to the country.

We are very much surprised, gentlemen, to learn that you have not got in this State, so far as we can learn, any close season for whitefish.

We have got a close season, and it is supposed to be vigorously enforced. And your not having a close season we think must arise from one of these causes, either that you fear the supply will never be exhausted, or that you think that the fish being common property should be fished for and taken when the people wish. We do not know from which of these causes you have no protection, but we think it would be well if you had a close season the same as we have. It would stop a great deal of grumbling and discontent on the border, from fishermen who complain there is a close season on one side and none on the other side of the water. And we think that taking fish during the spawning season, is a matter to be regretted, because undoubtedly thousands of spawn are destroyed every year ; and fish taken then are unpalatable for food. We think that this should be stopped, and as far as our Commissioners are concerned, we hope to see something done at this meeting, as to a close season for whitefish.

I may tell you, gentlemen, that in Canada we are cursed with too much government. We have a large federal government, and every Province under that has its local government, and the present state of things is somewhat unfortunate. Our Dominion Government has laid claim to the waters of the Provinces and has insisted that it should control and legislate for these waters. Last year the Premier of the Ontario Government, contended that the Province had a right to administer and have control of its own inland waters, and I may tell you that a friendly case is now being argued, or being prepared to be argued, in the courts, dealing with this matter. We think the courts will allow the claim which our Premier has made, and that we shall soon control our own waters. When this is the case it will be easier to deal with this matter than in the past. The work is popular, and considerable good is done, but we hope that even more can be done in the future. We hope that the courts will allow the claim made by our Premier, and that we will soon have a permanent Commission appointed, because, as I told you, the present one is only temporary, and that our Commission will do the good work that yours are doing in the different States. This is the present condition of the affairs in Ontario. We think as far as possible uniform laws should be passed between Canada and the States ; especially between the Provinces of Ontario and Quebec and the States bordering on them. We think the more closely the laws can resemble each other in these neighboring States and Provinces the better, and we are here to urge that such a recommendation should be made at this meeting.

Our Commissioners very strongly pronounce against the pound net. The destruction of fish, gentlemen, in the waters of Ontario is something enormous, and I tell you that thousands and thousands of tons of good fish and good spawn have been allowed to rot along our shores. We think that the pound nets are a source of great destruction, and we are endeavouring, so far as possible, to put a stop to them.

In regard to the letter read from Mr. Dunning of Wisconsin, I see he touches upon a point upon which our Commissioners are unanimous; that is, that a restriction should be made not only as to the size of the fish marketed but as to the size caught. There are people who come to us—our own people, and strangers who come in droves—and they fish not so much for food but to make records, and every two-inch minnow is counted as a fish and taken away, or killed, and our waters are depleted in that way to a much larger extent than anyone can imagine. We think a restriction should be made upon the size of the fish caught and the fish to be marketed. We are going to recommend the establishment of fish hatcheries in Ontario—we have no fish hatcheries now; there is one in Newcastle, it is true, and one in Sandwich, but they are Dominion government fish hatcheries—and we propose to have fish hatcheries of our own and pay special attention to fish rights and fish; and in fact in every way possible to try and so arrange matters and so carry out the intelligent ideas which we borrow from others, as to make our Province a thoroughly good fishing country again. We have had no permanent wardens. Our wardens are paid a nominal salary of forty dollars a year, and not wishing to incur the ill-will of neighbours, they very wisely pocket the forty dollars a year and do nothing. There is no protection, and it simply arises from the fact that it has been everybody's business and nobody's business in particular to enforce the laws. We look forward, gentlemen, with much anxiety, also with much pleasure, in anticipation that you will help us in these matters, aiding us to arrive at some sort of reciprocal law, some sort of reciprocal feeling whereby the two countries will be more united over this Fish and Game matter, which will lead to a better feeling on both sides of the line and will lead to more close protection of game.

I think, gentlemen, that this is all I have to say at present. Later on, as the discussion proceeds I may have more to add.

I am very glad indeed to see so large a meeting, and am sure I shall be able to tell our Government what a good and interesting meeting we have had, and what a good reception we have had here; and I hope when next we meet—because I hope we shall meet frequently—I shall be able to make more happy statements than I have done to-day, because to-day our cause is deplorable. I hope that next time the tale I tell you will be a brighter and better one.

SECRETARY: We have with us a Commissioner from Michigan, and from all I can read from their reports, that State has done the most thorough and effective work on the great lakes of all the States, and, if he will, I would like to hear something from him in answer to the Canadian Commissioner about the close season that he speaks of there, more especially.

MR. HOYT POST: Mr. Chairman, there is another subject connected with the call of this meeting that I am, and our Commission is, more interested in than that which has been suggested. I, myself, am inclined to agree with what the gentleman from Ontario has said of the desirability of a close season in whitefish catching, but there are some things which he suggested which come to my mind and remind me of the difficulties in the way. Now, he discusses the proposition as to whether or not pound nets should be permitted. At the present day you could no more abolish the pound net in the State of Michigan than you could fly. You go among the fishermen and you would find that the pound net fishermen would claim that it is the gill nets that do all the harm; and the gill net fishermen claim it is the pound net fishermen who do all the harm. Largely they are both correct when they are speaking of one other. Now, with reference to the size of the mesh: That is the line, principally, upon which the Michigan Commissioners thus far have been directing their efforts to protecting the whitefish. It is very well to say that you shall not catch a fish beyond a certain

size, but you know how a gill net is made, probably, and if the fish of the prohibited size gets into the gill net he is caught and he is dead, and when he is dead he might as well be used as thrown back into the water. So with your pound net; if the size of the mesh at the back of the trap is small enough so that he does not escape, he is captured. The advantage of the gill net over the pound net is that the pound net preserves the fish alive until they get into the boat, and those taken by the gill net are dead anyway and might as well be used. The thing we need in Michigan is not so much laws to protect fish, as it is a proper enforcement of the laws we already have. Of course we are a large fishing State and the capital invested there is very large. The people interested in fishing and the communities interested in fishing are large and extensive. We have had a long struggle there to satisfy these practical fishermen—many of them who are, or were at least, in the early days somewhat ignorant and illiterate people. At the present time the fishing interests are being largely centered in large concerns who employ the smaller fishermen to fish for them. We have found great difficulty in getting the people to believe in the efficacy of planting fish. We have now, after several years, got them educated. The day has come when we have no difficulty in going to the legislature for and getting any reasonable amount. We ask for protection of fish, and we find it has helped us in that line, that we have divorced the protective and prohibitive administration of the law from the propagation. We intend to especially give our attention to the propagation and distribution of the fry. We have this to contend with. We have passed a law appointing a Fish and Game warden, and authorizing the game warden to appoint deputies, the deputies to be paid as the supervisors shall approve; the difficulty is, you get into a county where the supervisors are not fishermen. What sort of a salary do you think the game warden would get there for fighting the interests of the fishermen? And they have their political influence, and the result is, in the parts of the country where the law should be most rigidly enforced, the feeling is more against it on account of the fishing interests there, and by reason of the law being put in the hands of political tools of the supervisors. Power for protecting the fishing interests should be put into the hands of the State officer, who should employ deputies who should be paid by the State, and should not be residents of the locality where the law is to be enforced, as such deputies would not be affected by a desire to shield their neighbours.

Now upon the general question which I say I feel much more interested in,—although all questions suggested here are of much interest to us,—the question which has stirred us up more than anything else proposed in your proceedings was the proposition practically to turn over the fisheries of the great lakes to the United States Government. Our Commission, at its last meeting, taking into consideration the letter which was addressed to Dr. Parker of our Board, passed unanimously a resolution deprecating any such idea, which resolution I hope at a later time to present to this Board and to be heard further upon. Permit me to say here, in advance, that the line which seems to be proposed by that movement is directly opposed to the line which the Canadian Commission seems, as Mr. Stewart says, now to be seeking to carry out. Instead of centralising the matter in the Dominion Government, they are seeking there to have the Provinces have it. Now the situation to-day in this country is, as I understand it—and I was a little surprised at the letter of Mr. Dunning in connection with it—the situation to-day, as I understand it, is that Congress and the United States Government have no control whatever over the fishing interests of these great lakes; the whole subject is in the hands of the separate states. Congress cannot control it if it would. I desire to have considerable to say upon that subject.

Now, with reference to the Michigan Fish Commission: we feel as though we had done a very good work in whitefish hatching. I was looking over reports coming down here; I found in the summary of fish planted in the last ten years, it amounts to more than five hundred million whitefish. That is a very large showing, but when you consider that more than half of it has been done within four or five years, you will see that we have not yet come where we can feel the full effect on the great lakes. In the same time we have planted nearly a hundred million of the wall-eyed pike. We have within the last two years doubled the capacity of our Detroit Fish Hatchery. We have now 1,050 jars. When those jars are filled we can distribute 160,000,000 of whitefish. We have this last year secured an appropriation of the legislature to establish a hatchery in the upper peninsula, and we have a hatchery there, all ready to do its work this fall with 300 jars. That increases our capacity nearly a third, so that if the ova can be obtained to fill our hatcheries, we are able to plant nearly two hundred million whitefish a year in our lakes. Do you know it takes to fill our thousand and fifty jars, a hundred bushels of whitefish eggs? From the same jars, and in the same hatchery, and with the same force of men with which the whitefish are hatched and planted, we hatch all the wall-eyed pike we can get after the whitefish have gone out. We have been able to hatch but part of our house full. We can impregnate of the whitefish between ninety and ninety-five per cent. of the eggs taken, and we will hatch those eggs with a loss of from ten to twelve or perhaps fifteen per cent., still of the wall-eyed pike our loss is forty per cent perhaps; and with a view of discovering the source of that loss and remedying it, if possible, we have spent a considerable sum of money in the employment of a scientist and microscopist to attend the men in their work to discover what there is about the wall-eyed pike egg that makes it so difficult to impregnate and hatch in comparison with the whitefish. Those of you who have seen our report for last year have seen something of the work of that scientist, because in the appendix there is quite a long article describing the development of the wall-eyed pike, and of course in addition to that he has given us many additional practical suggestions with reference to the best way to handle the eggs.

Gentlemen, when you realize that the State of Michigan, (only one of the several bordering States I grant you, but the one in the Union most of all interested in the great lakes because she is surrounded by a coast on all sides, having upwards of two thousand miles of coast); when you realize that that amount of work can be done by the State of Michigan to-day, with her plant in the shape it is, you will recognize why the people of the State of Michigan are loath and reluctant to have any part of that work given up to anybody else. We invite the co-operation of anybody; there is no question but that there is a field there for everybody. There is a field in these great lakes for all the money that can be gotten from the public for the hatching of fish for these great lakes. Why, we have only commenced the work! There is no room in our own government for any jealousy or wish to supplant anybody else, every State that has a coast bordering upon these lakes ought to be interested enough to expend money enough to provide for the hatching of these fish. It can be done now at small expense; it is not a matter of large outlay that requires the central government to take hold of it.

I don't know but I have trespassed longer, at least than I expected to, but I desire to be heard further on that general subject before the meeting shall close, and with these remarks I will leave the question.

CHAIRMAN: Discussion is open to any gentlemen who wish to be heard.

MR. STEWART: What do you think, Mr. Post, about the close season for whitefish?

MR. POST: I am hardly prepared to say about that. Of course a considerable part of the catch of whitefish is taken in and near the spawning season. I don't know what the results have been in the Provinces where they have had a close season; I do know this, that on Lake Superior, at least, while they have a law prohibiting fishing after a certain time, it doesn't amount to a great deal. I know that from practical experience. I know that probably if it was done in a quiet way, we would have no difficulty in going over to the Canadian side and getting fish eggs of the catch that had actually been made there. We would have to do it in a quiet way, because, if much trouble was made about it the laws might be enforced. I believe the Canadian laws are better enforced than the laws of the States, certainly better than those of the State of Michigan.

CHAIRMAN: There has been something said by the gentleman from Ontario and the gentlemen from Michigan, in regard to the inadequacy of protection in those countries. The laws may be sufficient but the means of enforcing them do not exist. Of course it is useless to have laws without having ample means of enforcing them.

MR. STEWART: I forgot to say when I was speaking about pound nets, that we are unanimously of the opinion that no person should be allowed to use gill nets without the sanction of the Commissioners.

SECRETARY: Mr. Chairman, here is something that I overlooked which ought to have been noticed before: This is a letter from Mr. A. G. Yates, President of the Buffalo, Rochester, and Pittsburg Road to Hon. George F. Danforth.

BUFFALO, ROCHESTER AND PITTSBURGH RAILWAY CO.,

ROCHESTER, N. Y., Nov. 9th, 1891.

HON. GEORGE F. DANFORTH,

President Cheaper Fish Food Association:

DEAR SIR,—Should you and your guests desire to visit the State Hatchery at Caledonia, it will give me pleasure to furnish a special train.

Yours truly

A. G. YATES, President.

I will also state that one of the members of our association, Mr. D. W. Powers, wished me to say to the visitors here that his picture gallery is open to them, and he would like to have them visit it.

PRESIDENT: The thanks of this committee will be tendered to the gentlemen.

Senator McNAUGHTON moved that both of those invitations be accepted, and the time be fixed upon to visit the hatcheries at Caledonia. Carried.

SECRETARY: Mr. Chairman: There are two more gentlemen here from whom I would like to hear, Mr. Ford, of the Pennsylvania Fish Commission, and Dr. Smith, who represents the United States Commission.

MR. FORD: Gentlemen: As Pennsylvania has but a very limited area on the lakes, (I believe only twenty-eight miles on Lake Erie), the questions of the Commission she has very little to say about. We have established a hatchery in

Erie, and from that we have put out many millions of whitefish during five or six years, and it is developing. During the present season we have put out fifty-millions of wall-eyed pike, besides some fifteen millions of whitefish. We take pride in our State hatchery, and I think there is a sentiment in the Pennsylvania State Commission which is averse in yielding to the general government; not but what we would like to see the general government do all it can towards it, but we are rather loath to giving up our old plans. We have a regulation prohibiting the catching of fish within a mile of the shores. This gives a chance for the fish coming close to shore to spawn, and there are other regulations likewise prohibiting any offal being put in from any towns, and deleterious substances such as sawdust and coal oil or the like, to contaminate the waters,—a matter which I think is likewise very essential to the perservation and protection of the fish.

In regard to the size of the mesh, I hoped Mr. Streiber, who is here from Erie, would have something to say about it, but I see he has left the room.

CHAIRMAN: Won't you give your own view in regard to the size of the mesh?

Mr. FORD: I think, myself, the size of the mesh should be so regulated as to prevent the taking of any small fish.

CHAIRMAN: Have you any dimension in your mind, of the mesh?

Mr. FORD: I think we have no dimension at all in our leading descriptions.

In conclusion, we hope to see a reciprocal law between all the States and Canada regulating the fishing in Lake Erie. I think it is one our Commission would do all in its power to promote.

Dr. SMITH: Mr. Chairman, I did not attend this meeting with the expectation of being called upon to say anything. I do not know that I can make any remarks that will be of value or interest. I desire to ask to be relieved of active service on this committee because of my relations with the general government. It would seem to be proper that in a matter of this kind, affecting as it does foreign and State borders, and leading up to State legislation, that a position of strict neutrality should be maintained by the U. S. Fish Commissioners. This at least is the view of Commissioner McDonald, and I think the gentlemen will understand his motives. At the same time I desire to express, on behalf of Mr. McDonald, his interest in this matter and his desire and willingness to do anything that he can to assist in coming to the most correct and just conclusions regarding legislation.

I hold in my hand a report which the Commissioner made to the Senate of the United States at the time of the passage of the law establishing a hatchery on Lake Ontario, and I should like to file it since it corroborates much that has already been said and possibly throws some new light on the subject.

Mr. FARQUHAR, from the Committee on Merchant Marine and Fisheries, submitted the following report;

The Committee on Merchant Marine and Fisheries, to whom was referred the bill (H. R. 13,350) for the establishment of a fish hatchery in the State of New York, near the St. Lawrence River, respectfully report said bill back to the House, with a proviso thereto as follows:—

Provided, That the Commissioner of Fisheries shall first be satisfied that the State of New York has taken efficient measures for the regulation of periods for fishing and for proper protection of fish in the spawning season in the waters of northern New York.

And that when so amended your committee recommend the passage of said bill.

The accompanying letter from the United States Commissioner of Fisheries, communicated to the Senate, gives sufficient reasons for the establishment of the fish hatchery proposed to be established by the bill, and the same is made a part of this report:—

U. S. COMMISSION OF FISH AND FISHERIES,

WASHINGTON, D.C., Jan. 26, 1891.

SIR,—In obedience to Senate resolution of December 18, 1890, directing the United States Commissioner of Fish and Fisheries to report to the Senate as to the desirability of the establishment of a fish hatchery in northern New York, near the St. Lawrence River, I have the honour to report as follows:—

The basin of the St. Lawrence, including Lake Ontario and Lake Champlain, and the innumerable smaller lakes and tributary streams which drain into these, comprises fully one-half of the area of the State of New York, about one-fourth of the State of Vermont, and on the Canadian side a more considerable drainage area.

In Lake Ontario, whitefish were formerly very abundant. The value of this fishery has declined year by year, and at present the production is relatively insignificant compared with the whitefish fisheries of Lake Erie, Lake Huron and Lake Michigan.

In the waters referred to, a like decline was in progress, but those who were interested in those fisheries were prompt to recognise the necessity of legislation to restrain and regulate the methods, and apparatus, and seasons of capture.

Artificial propagation was also systematically resorted to, to supplement and re-enforce natural reproduction, and whitefish hatcheries were established by the States of Michigan, Ohio, and Wisconsin, and by the Canadian Government. Entering the field at a later date, the United States Commission has established stations for the collection and hatching of whitefish at Alpena, Mich., Duluth, Minn., and Put-in-Bay, Ohio.

The result of this co-operative fish-culture work by the Canadian, State, and United States Fish Commissions has been not only to arrest the alarming decline that was in progress, but to determine a marked increase in the catch of whitefish in those waters in which fish-cultural work has been carried on.

The marked contrast between the present conditions of the whitefish fisheries of Lake Erie and Lake Ontario, sharply defines and emphasises the necessity of artificial propagation as a means of maintaining and improving our important commercial fisheries, and of creating such in waters where they have not before existed.

We cannot afford to neglect so important an economic resource, one which gives such substantial and valuable returns for moderate expenditures.

We cannot expect individual enterprise to undertake such work in public waters in the expectation of private gain. Men, however public-spirited, will not sow the seed of a harvest which all men may gather. Our lakes, and rivers, and coast waters, must be farmed by the Government for the general use, and under such regulations as will establish and maintain the largest production.

Another important commercial species which formerly existed in Lake Ontario in marvellous abundance, but which is now so rare as to be an object of curious interest when seen, is the Atlantic salmon. Sixty years ago, each season it ascended the St. Lawrence in vast numbers, and swarmed in all its tributaries. Following both shores of Lake Ontario, it ascended all the smaller streams which fall into it and which afford suitable spawning grounds for the mature fish and favourable nurseries for the fry during their period of river life.

The following extract from the annual report of the Department of Marine and Fisheries of Canada, for the year ending June 30, 1869, will be instructive as well as suggestive:—

Special Report of Messrs. WHITCHER and VENNING, on Fish-Breeding at Newcastle, Ont.

“We proceeded yesterday to Newcastle, Ontario, in compliance with your directions, and made a personal inspection of the fish breeding establishment there under charge of Mr. Wilmot. The premises are situated on Baldwin’s or Wilmot’s Creek, a small stream traversing the township of Clarke, in the county of Durham, and discharging into Lake Ontario, about forty miles east of Toronto. This creek is well situated for salmon, as it forms a natural inlet of the sheltered bend of the lake between Bondhead and Darlington. Although at its entrance into the lake it passes through a marshy lagoon, the bed of the stream farther inland is of a gravelly nature and the water is pretty clear, regular, and lively in its flow. In early times it was famous for salmon, great numbers of which frequented it every autumn for the purpose of spawning. They were so plentiful forty years ago, that men killed them with clubs and pitchforks, women seined them with flannel petticoats, and settlers bought and paid for farms and built houses from the sale of salmon. Later they were taken by nets and spears, over 1,000 being often caught in the course of one night. Concurrently with such annual slaughter, manufactories and farming along the banks had obstructed, fouled, and changed the creek from its natural state, and made it less capable of affording shelter and spawning grounds. The yearly decreasing numbers at length succumbed to the destruction practiced upon them each season from the time of entering the creek, until nearly the last straggler had been speared, netted or killed.

The history of the salmon fishery of Wilmot’s Creek, so graphically told by the Canadian Commissioners, has been repeated in every stream of the State of New York which drains into Lake Ontario and the St. Lawrence River. All were frequented by the salmon, and from each, each season, went out a numerous colony of parr and smolts, which descended the St. Lawrence to the gulf, where they remained until they had attained size and maturity, when, obeying the impulse of reproduction, they ascended the St. Lawrence and distributed themselves to all the tributaries of lake and river, carrying back to these inland waters the rich harvest of the sea which they had gathered.

This magnificent fishery has ceased to be. Did it exist to-day, and were the conditions which made such a fishery possible prevailing to-day, a hundred streams now barren would afford salmon fishing as attractive as the more favoured waters of Canada, and the catch by net in the lake itself would furnish the motive of a valuable commercial fishery.

The cause of the disappearance, practically, of salmon from the streams of the St. Lawrence Basin, has been chiefly and primarily the erection of obstructions in all the rivers, which have prevented the salmon from reaching their spawning grounds, and so natural reproduction has been absolutely inhibited.

The restoration and maintenance of the whitefish fisheries of Lake Erie, or of the salmon fishery of the lakes and rivers, would either of them furnish sufficient motive for liberal expenditures on the part of the Government, if we consider the matter from a purely practical and economic standpoint. It is not only possible, it is entirely practicable, to restore and maintain these fisheries, by adequate recourse to means and agencies entirely within our control.

The regeneration of the fisheries must be accomplished through fish-cultural work, systematically and persistently pursued. Their maintenance must be assured by concurrent regulation of the lake fisheries by the United States and Canada, and by the enforcement on the part of the State of New York of such regulations and requirements as will permit the salmon to ascend to their spawning grounds. In the absence of such regulations and requirements, it will not be reasonable to expect that the results of fish-cultural work will be permanent or compensating, however extensive such work may be.

A fish-cultural station, planned to meet all the requirements, must be very extensive and complete in all its appointments, and will involve larger expenditure than would be required for a station devoted exclusively to the production of whitefish or the salmonidæ."

CHAIRMAN: Dr. Smith asks to be relieved from further practical service on this commission for the reasons he has stated: the question will be on granting leave. Carried.

Senator McNAUGHTON: Mr. Chairman, Gentlemen, no arguments are needed in support of those advanced by Mr. Amsden, that there should be action taken to increase fish food, and increase the number of fish in our lakes and inland streams. From the earliest organisation of the Fish Commission in this State I have taken a deep interest in the subject, and done what I could, either as a private citizen or legislator, to facilitate its work. I think there are very few of us who realise the important position, geographically, of the State of New York as connected with the great lakes and streams that are well calculated to furnish an almost endless supply of fish; and what I shall say will apply more particularly to this State and to the Provinces. I recognise the importance of enactments by the different States bordering on the great lakes, and by the Provinces, of uniform laws for the protection of fish and fisheries, and there is no doubt the States adjoining the great lakes are more interested than those away from the northern lakes. I agree with the Commissioner from Michigan that the matter of fish, and fish protection, should be left to the States along the shores of the lakes, and not transferred to the general government. In my judgment, the general government, in matters of that kind, acts too slowly; the machinery is too complicated, and I believe that each of the States, Vermont, New York, Pennsylvania, Ohio, Michigan, etc., are entirely competent to fully protect any matters of that kind; and I should very much regret if the general management of the fisheries was turned over to the Government instead of being left to the Commissioners of the various states. I think very few of our citizens realise this fact, that the State of New York, bounded on the west by Lake Erie and the Niagara River; on the north by Lake Ontario—flowing past us three-quarters of the fresh water of the habitable globe—and St. Lawrence River, the waters of which flow on to the ocean; east by the Hudson River and the Atlantic Ocean, which of course furnishes an abundant supply of fish; in addition there are the inland lakes and rivers suitable for fish and fish-culture. There is no state in the Union, Michigan not excepted, that is so favourably situated for furnishing an unlimited supply of fish of the proper kind for table use as the State of New York. I admit that Michigan has a larger number of miles of lake shore, but it has not the variety of water that this State has. Comparatively it

seems that Commissioners of this State have done more than those of any other state in furnishing for the inhabitants a cheap supply of fish. This state has not been at all backward in furnishing money for the fish Commissioners. If I remember rightly, the Commission was first appointed in 1868; the late Horatio Seymour, our friend the late Seth Green, and Mr. R. B. Roosevelt were appointed Commissioners to examine the subject. Their report covered the ground completely. From that time interest in the matter throughout the state has been steadily growing, and it may be a surprise to some of you to know that during those years this State has appropriated \$433,000 for the aid of the fish Commissioners in various ways; that includes \$6,500 for the appropriation for shell fish; but aside from that, either for clerk hire or appropriations, that immense amount of money has been appropriated. I have no criticism or comment to make on the way that that money has been expended; in my judgment great good has come from it. The commissioners have laboured assiduously and intelligently. They have performed all the duties without any salary, which I think is not to the credit of the State; I believe there should be a proper salary affixed to that office, but of that the Commissioners have not complained, and perhaps I should not. But in my judgment, it is not of the greatest importance to the inhabitants of this State that the Adirondacks, and island lakes and streams should be stocked, which, for a great part are private property, or owned by the State, and generally inaccessible, in which the ordinary citizen cannot fish because prohibited either by reason of private ownership or by being the property of the State. It is not of the first importance that those small inland lakes or rivers should be stocked with fish; not a tenth of the importance that the supply of whitefish and salmon in Lake Ontario, and shad in the Hudson River should be increased. For the great majority of people in this state, trout in the Adirondacks are not of great consequence, but it is important that the immense quantity of whitefish and salmon that once existed in Lake Ontario should be restored, for then, in this locality, whitefish were sold for the nominal sum of four or five cents a pound, and furnished a great industry to parties along the lake from Lewiston to Kingston; and the salmon trout, the finest fish I believe found on the Northern States, is almost extinct except in the northern shore in Lake Ontario. Since I have held an official relation with this and Orleans County, I have made inquiries in regard to salmon trout. There are people living in this county who remember that twenty-five or thirty years ago salmon were in great abundance. I have recently conversed with intelligent citizens of Orleans County who state that in Oak Orchard Creek, Johnson's Creek and in Sandy Creek, forty years ago salmon trout weighing as high as twenty to twenty-three pounds were caught in abundance. There was no difficulty whatever in the average fisherman going to either of those creeks and supplying his family with all the fish desired. Now those streams, particularly Johnson's Creek, Sandy Creek and Oak Orchard Creek have a gravelly bottom, and from aught I can see, are as well adapted to the cultivation of salmon to-day as forty years ago. At that time, and perhaps for fifteen or twenty years after that, it is very likely that the sawdust which accumulated in great quantities and floated down the streams in large quantities, drove the fish away. At least the fishermen attributed it to that, and I am informed that hemlock sawdust is poisonous to fish. At all events there are no salmon there to-day and have not been for thirty-five years. But there is nothing of that now, and as far as I know there is no deleterious substance in those streams which would prevent salmon and whitefish being hatched in those streams in abundance; and I have the suggestion to make, for I understand the meeting is called for that purpose, that the Fish Commissioners of this State should turn their attention more to establishing hatcheries at various points along Lake

Ontario, and if possible, increase in that lake the supply of whitefish and salmon trout. I believe on the northern shore of Lake Ontario there is a large amount of salmon caught and of whitefish. I am not an expert fisherman, and perhaps not so familiar as I should be with the habits of the fish, but I know of no reason why whitefish should not now abound on this side the lake as well as forty years ago. Lake Ontario was recommended as a source of water supply for Rochester; tests were made and it was found the water was pure. There is no reason why it should be impure; and I believe as good condition for the cultivation of fish food exists in Lake Ontario to-day as forty or fifty years ago. I think the attention of the Commissioners should be called to the importance of investigating that matter fully, to ascertain if this side of the lake can no longer be the home of the whitefish or salmon trout. I think also the cultivation of shad in the Hudson, for the interest of this State, should be pushed to its greatest possibilities. For the interest of New York and Brooklyn, and other cities in our State, with the railroad facilities in the State, I think nothing more useful could be done for the people than to increase the quantity of shad in the Hudson, and increase in Ontario the salmon and whitefish, and thus furnish a supply of fish food for the people, and not at present give so much attention to the stocking of lake streams in the Adirondacks. We could, in my judgment, very well get along without trout in the Adirondacks if there were in Lake Ontario and the St. Lawrence a full supply of food fish. I make these suggestions because I have taken pains to make inquiries of inhabitants in lake counties, and their belief is that salmon trout and whitefish can be restored in Lake Ontario. It is possible that there are conditions that render it impossible to propagate to any great extent those fish now; I am not prepared to say that is not true; but I think the Fish Commissioners will do the state a service and reflect great credit on themselves if they push the experiments at points—say at Johnson's Creek, Oak Orchard Creek, Sandy Creek, and points along the lake shore; establish hatcheries there; see if it is possible that by producing the small fish or fry in the streams at these points, the salmon will come back, or if the supply of whitefish can be increased. I believe that the intention of the legislature was not so much to furnish for sportsmen sport in catching fish in the Adirondacks, which are almost inaccessible to the average person, as to supply to the inhabitants of this State a supply of fish food at fair and even cheap rates. In my judgment that can be done; and in my opinion the attention of the Commissioners should be directed that way. As I said before, I have no comment to make as to the expenditures of money in the past. I believe they have been judiciously expended—for to a very great extent this matter of fish cultivation has been an experiment. I think as early as 1865, Mr. Roosevelt was a Fish Commissioner, and published a book in which he said that there should be protection to fish; that the supply of fish food could be increased in the large lakes to an unlimited extent, using, in fact the very best arguments that could be used, and that, in the very line that I have suggested, and yet nothing—at least not very much, has come of that. I believe it does not require very much skill to frame bills relating to protection of fisheries, that will meet the approval of the law-making powers in the Provinces, and of the law-making powers of this state, and in Pennsylvania, which are directly interested in Lake Ontario and which can be enacted. I have no doubt but that my friend Judge Danforth could frame bills in a short time that would meet the approval of this state, Pennsylvania and the Provinces; and I believe it would be infinitely better for the states bordering on the lakes that the management and control should be left to the commissioners of those states. They have in the past shown a great interest in that matter; I know that interest will be continued, and I believe they

can a hundred times better serve the interests of the state than the Fish Commissioners of the United States, who are sure to move very wisely and intelligently but slowly. The United States Government could of course co-operate, but each state knows best the variety of fish that can be cultivated within its borders ; and speaking for myself, I should dislike very much to have the powers of the fish commission of this state turned over to, or interfered with, in any way by the general government. I regret that I have not more statistics to furnish this assemblage in regard to the extent to which the whitefish seems to have been depleted in our great lakes, but this I know, that at the very homes of the species known as the brook trout, where formerly they abounded, now a trout dinner will cost a dollar ; a whitefish dinner at the lake costs a dollar ; and if this is a step in furnishing cheap food to the inhabitants in this State then I am mistaken. I think the commissioners in this State should turn their attention more particularly to the propagation of fish in the lakes and streams I have referred to, and in other streams east of Rochester on the lake shore, than to be so particular in stocking lakes in the "north woods" and in other places that are only accessible to the sportsman.

I did not intend to say anything when I came here, only to listen ; I felt honoured in being invited to come here, but the suggestion in the letter of Mr. Dunning referring the matter to the general government did not meet my approval, and I concur with the gentleman from Michigan in that respect.

I am obliged to you, Mr. Chairman, for the courtesy of being permitted to address this meeting.

CHAIRMAN : The chair would like to ask of Mr. Green something in regard to the proper size of mesh for nets in the lakes. You have been a practical fisherman ?

Mr. GREEN : I have.

CHAIRMAN : What is your idea of a proper size of mesh for nets—pound nets and gill nets in the lakes ?

Mr. GREEN : I do not think that in gill nets a smaller mesh should be used than $2\frac{1}{2}$ inch bar.

CHAIRMAN : Two and one-half bar, that makes a 5-inch.

Mr. GREEN : Yes ; the average size, then, is three pounds or over. The smaller fish go through. In regard to the pound net, if you have a large mesh a great many fish would be killed. A pound net will clean out any stream, I don't care where it is ; if they took the pains to separate them, took out the small fish and put them back, which the fishermien will not do. I have seen boat-loads taken in, and a third of them would not be marketable.

CHAIRMAN : Which is most destructive to fishing, pound or gill nets ?

Mr. GREEN : I think a pound net is. If a gill net is restricted to a proper size mesh, the small ones will go through ; and a pound net takes from a six-inch up to a sturgeon.

It was suggested by Mr. Amsden that a time be fixed upon for visiting the hatchery at Caledonia, but it was decided to leave the matter open until the afternoon session.

Mr. AMSDEN moved that this committee take a recess until two o'clock.
Carried.

2 O'CLOCK P. M.

Meeting called to order by the Chairman.

Mr. AMSDEN moved that the invitation of the Buffalo, Rochester and Pittsburgh Railroad to visit the Caledonia Hatchery be accepted, and that the committee leave at nine o'clock Wednesday morning, make a visit of two hours at the Caledonia Hatchery, and return in time to assemble here at one o'clock. Carried.

CHAIRMAN: There are four representatives here from the St. Lawrence Anglers' Association from whom the committee would be glad to hear.

Mr. SKINNER: There is one of our committee here, Mr. Howard Folger, of Kingston, who is deeply interested in this question, and as his business calls him away this evening, we would be pleased to have him make a few remarks.

Mr. FOLGER: Mr. Chairman and Gentlemen—My father expected to come here until the last minute, and then asked me to take his place. Of course I have examined the matter under discussion very closely, and am interested in it very deeply. We are situated at the head of the Thousand Islands, and greatly interested in the subject, and we know the popularity of the Islands depends upon the fishing; that is a point of great importance, and as the rivers of that point merge into each other, the American and Canadian waters, there is no place where it is of more importance to have the laws assimilate and have them bound to each other. My father wished me to state that he regretted not to be present, and he would be glad to concur with the committee in some action which would protect the fishing interests. I did not come with the idea of giving but rather of receiving information.

CHAIRMAN: You are a member of the Anglers' Association?

A. Yes, sir.

Q. You concur, I suppose, in their views of nets on the river?

A. Yes, sir; I think the great point there is the fishing,

Q. You live in the Canadian jurisdiction?

A. My home is on the Canada side, but I am on the American side during the summer, in connection with the Thousand Islands Steamship Company.

Q. Are you familiar with the feeling on that side?

A. Well, I haven't talked very much with the fishermen, but the feeling comes more from the other side against the Canadians, I think. You see they are allowed to net in the Canadian waters, and the government allows them to net.

Q. What do you think of that system?

A. I think it is very deleterious to the river interests and to the game fish in general; it destroys fishing.

Q. Would the people on that side sustain a law abolishing all netting?

A. I think they would on the river from the head of the river down. And in the Bay of Quinte, which is one of the greatest fishing grounds for sporting fish such as muskallonge and bass, I think you would receive a hearty co-operation for abolishing nets all along the river.

Mr. SKINNER: Mr. Chairman, Gentlemen—I could say a good deal on this question that is of value and importance, but my desire is to condense my re-

marks as much as possible, as I know your intentions are to hurry the work and finish to-night. The special line of interest that I and the other members of the committee of the St. Lawrence Anglers' Association present here are concerned in, is to secure the co-operation of the Canadian government on the international waters of the St. Lawrence river, that by protection and, if necessary, propagation, the fishing may be restored to its former superb condition. If you desire me to say anything as to my personal knowledge of how the fishing has been in years gone by and now, I think I am able to do so.

I am a native of Canada, born in Brockville, Ont., nearly forty-seven years ago, and have been a resident in the vicinity of the Thousand Islands nearly all my life-time. My recollections as to the fishing extend back to the age of ten or twelve years, when the fishing in the vicinity of the Thousand Islands was infinitely better than it is now. I fancy it is so in almost all of the fishing districts; but my opinion is—whether endorsed by others or not—that the depletion is largely due to negligence in enforcing laws that have been enacted; and also in permitting licensed fishing. For an illustration: Some years ago, at Gananoque, Ont., the fish warden, seized a quantity of fish on the dock and arrested two parties—relations—for violating the fish laws. (Please note that the father of one was a government light-house keeper.) The officer laid his complaint before the magistrate at Gananoque. The prisoners, when asked to state their case (by the way, I wish to say this was along in November, long after the time for angling), one of them swore that he caught his barrel of fish with a spoon, and the other swore that he bought his fish from an American sportsman, said to have been fishing in Eel Bay. There are gentlemen here who know that these affidavits were base fabrications, and so did the officers of the law; but what could they do in view of such testimony? This is only one of many illustrations that I could give you of the most shameful violations of the Canadian fishery laws in the vicinity to which I allude.

One point more I desire to refer to, and I would be pleased if Mr. Stewart would kindly note it. Since the organization of our association, I have made efforts in Gananoque and Brockville to secure in some way the organization of a co-operative association similar to our Anglers' Association; but I have been met with the argument that we on the American side have been progressive people; that we have built cottages and improved our islands, and that we want Canada to legislate in our behalf. That we have been progressive I do not deny; that our motive in securing co-operation upon this question is selfish I do deny. Our interests are here identical.

The Canadian government is now inviting this progressive spirit by placing its islands adjacent to ours upon the market, and I know that Mr. Grant, Mr. Thompson and Mr. Folger will bear me out in the statement when I say that these islands are being purchased largely by American gentlemen, with the expectation that the Canadian government will afford them the same protection in all that goes to make them good fishing resorts, that they would be able to secure on our side. And that, to me, seems a sufficient argument why the Canadian government should interest itself, and prohibit the use of nets in the waters surrounding these islands.

I am sure that I can give abundant evidence that protection improves the fishing upon the American side.

During the past year the sportsmen who have been to the North Channel—Canadian waters, and once noted fishing grounds—state that they are unable to catch any fish larger than are able to pass through an ordinary gill net.

In comparison with this, the last two pickerel that I saw taken from Clayton Bay—a place as thoroughly fished with hook and line as any on the St. Lawrence river—weighed twenty-five pounds.

For the information of those present who may not be familiar with the locality, I beg to state that between Clayton N. Y., and Gananoque, Ont., the river is about seven miles wide, but owing to the many intervening islands, the shortest navigable channel is about nine miles.

CHAIRMAN: Would any other gentlemen from the Association like to be heard?

MR. THOMPSON: Mr. Chairman, I think I may say here what may not have any influence, but at the same time I am here to discuss the protection of fish. The matter has been thoroughly discussed; the necessity of it, which everybody concedes, and there is no doubt that everything is being done in this State to propagate that could be done. It seems almost in its infancy. The people have come to see the necessity of having food fish, and the necessity of propagating fish for that purpose. That thing is now under way in good shape; but at the same time that we are spending so much money to propagate, we should attend to the protection of our food fish after we get them propagated. As it stands now in Canada, with the privilege of netting, they use nets down to a very small mesh, and they are taking the small fish as well as those well grown, and it has the tendency to keep the quantity down. If we could have a limited time, or a limited amount of fish, so that everybody should not have the privilege of going in and netting all the year round, or netting all that they see fit to, our fish might be kept in the waters, but, as it is, they are soon netted out and our waters are depleted. We find that true in the river St. Lawrence. Years ago, before they commenced netting, you could go out and catch any amount of fish; any man could be gone an hour or two and catch all the fish he wanted; now you have to fish all day to get a good mess, literally speaking. That is all due to using nets. What we ask is protection in that direction. We have good laws; our Bill well provides for that protection. But the Canadian people on the opposite side license there the privilege of netting. It is hard to keep American fish from going into Canadian waters, therefore the whole river is depleted by that measure of netting. If we could persuade our Canadian friends to legislate some law prohibiting netting, I think it would be very beneficial. I am speaking now of the river. When you go up into the lakes it is beyond my knowledge; but I think that, as Mr. Skinner says, taking it down the river, the Canadian authorities have put their islands on the market and they are trying to get them populated the same as they are on our side, and the only thing to induce people to come there is to enact a law to protect the fish; this would be to the interest of anybody, both commercial and steamboat men and everybody interested in the pleasure business of the river. It has got to be a very important thing. Let what has been said and done so far be carried out, to the end that we may see some good result, and I would only suggest that perhaps a copy of the bill as we have it, should be submitted to the Canadian authorities, and let them look the matter over and see how near they are willing to conform to it, and if there is anything that is in accord with them we will try to get together on those points: if we cannot do it to-day, some future day; I think it would be beneficial to both sides.

MR. R. P. GRANT: Mr. Chairman, I think the ground has been pretty well covered by the gentlemen who have spoken, but there are two or three points I want to give my opinion on, one is in regard to the State Fish Commissioners having control and jurisdiction over the state fishing grounds and everything pertaining to them, instead of the general government. I think the gentleman from

Michigan and also Senator McNaughton struck the key-note when they said the State Commissioners should control those things: I think it would be a dangerous precedent for the United States government to get control of the Fish Commissioners along the chain of our inland lakes and the St. Lawrence River.

Every petty office on the chain of lakes would be a political office. We would not only see it in our Presidential, but in our State and county elections, and it would be a political question, and something which ought not to exist. And I wish to concur in the remarks of those same gentlemen, in regard to fish food. We all know that the man who eats a speckled trout to-day has a luxury; and we also know that while white fish were common fish a few years ago, the man who eats them to-day has virtually a luxury; the labouring man, the mechanic and the farmer cannot get them any more easily than they can the speckled trout. And I think the views of these gentlemen on that point are the key-notes in that respect; I fully concur on that point; but I came here as a representative of the Anglers' Association. My interest is mostly in the St. Lawrence River. We have in the St. Lawrence River about twenty-five miles covered by parks, hotels and cottages, and have \$3,000,000 invested in parks, mostly by foreigners and strangers, that is they are foreigners to our river. What brings them there? The St. Lawrence River for one thing, and the fishing in the St. Lawrence River for another. We have thousands on the St. Lawrence River, at the Thousand Islands, every year who come for fishing, and we feel with the large amount of money that is invested there, that something ought to be done by our Legislature to protect the fishing. We know the gentlemen that composed the Codification Committee. Our Chairman, General Sherman, who succeeded Governor Seymour, and Mr. Roosevelt one of the first Commissioners appointed by our State, and Deputy Attorney-General Whittaker made a committee we all felt pleased with; and the sporting men of our State, and the frequenters of the St. Lawrence River were pleased with that committee and knew that we would get a law that would be right and satisfactory to all, and which would protect all our interests; the Anglers' Association had the privilege of meeting these gentlemen on the St. Lawrence River. They came there to look the matter over; we told them our grievances, and they said, what do you want? We replied, we want a prohibitory law; a law that would prohibit net fishing in the St. Lawrence River. And when the Codification Committee prepared new laws we were pleased to see that these gentlemen had recommended a prohibitory law on the St. Lawrence River; but a prohibitory law on the American side does not protect us; we want Mr. Stewart and his Canadian colleagues to give us the same law on the Canadian side that we have on the American side. We hope they will give us a prohibitory law; that the fish on the American side will not go over into Canada waters and be gobbled up by the Canadian net pirates. The Americans will watch on our side, but the Canadians will camp on the Canadian islands and go over in the American waters to set their nets. We have Eel Bay and a number of other bays there that by nature are the natural breeding grounds for fish, and the Canada netters come over and try to exterminate our fish, and they would exterminate them but for the Angler's Association. We have taken hundreds of nets and burned them up. The Codification Committee have rendered a bill that pleases us but it has not become a law. This section was amended, and that section was amended, and the result was we had no law, owing to the deadlock in the Senate; we were virtually at sea again; and, as Senator McNaughton said, this Codification Committee virtually wiped out 239 Fish and Game laws and they have got it simplified in this bill they presented. But for the unfortunate dead-lock in our Senate last winter the bill would have been a law now. That seems to be the opinion of the legislators of 1891 that I have talked with on the subject.

I wish to say another thing by way of criticism of our State Commissioners. They wanted to get some spawn of wall-eyed pike last spring; they got a man by the name of M. B. Hill, near Clayton, and they authorized him—so Hill says—to set nets and take game fish illegally for spawn. I said to Hill, "Why do you do this?" He said: "You musn't find any fault with me; I am obeying orders." I said: "What do you call obeying orders?" He said: "The fish I take must go to the men for doing the work." They not only took the spawn, but they killed the fish, and the fish were taken away and sold to the fish-monger. We protested against it, and went so far as to get the District Attorney after them, but they pulled the nets out a week too soon for us; if we had been a week earlier we would have caught the whole of them. When Col. McDonald and Mr. Blackford and I went up to Hill's fish-pond in July, I put the question to Blackford: "Why is it, after the Legislature appropriates \$35,000 to do this work, that the men that catch those fish have got to take the fish and kill them and sell them to get their pay?" He hardly knew what to say. He said: "Does Hill say that?" I said: "Yes, and further, he says he is working under orders." "Well," he says, "he ought not to do it, for the men were paid."

But I wish that Mr. Stewart would impress upon his colleagues, when he comes to the St. Lawrence river netting, the necessity of prohibiting pound and gill nets for the St. Lawrence river; we do not want any pound nets nor any gill nets.

CHAIRMAN: I would like to ask you if netting on the St. Lawrence were stopped entirely, whether it would be necessary to have any hatchery?

A. I think it would not, so far as the river is concerned, because we have the natural fishing-beds and breeding-grounds that nature has provided there. They were wall-eyed pike that they were killing after taking the spawn, and I am satisfied that every game fish that they caught was killed and sold the same as the wall-eyed pike.

Q. Were nets set to catch the muskallonge and pickerel for their spawn?

A. No; the muskallonge are propagated only at Chautauqua lake.

I would like to say that Mr. Hill stated to me that if he were allowed to take the wall-eyed pike for their spawn, he could save five out of every seven fish taken and return them to the water. He made the statement to me that he was acting under orders; that Monroe Green had engaged these men, and the appropriation wasn't large enough to pay them, and the understanding was to take the fish for their pay.

CHAIRMAN: Hill is not now in the employ of the Commission, is he?

A. No, sir.

Q. Did his dismissal arise from this?

A. That was one of the main factors, I inferred from Mr. Blackford.

Q. You don't know whether he was retained by the Commission?

A. Mr. Blackford told me that those men were paid by the State, and Hill, of course, we know was paid by the State.

DR. SMITH: I saw some of the fishermen who did this work. They undertook it at the request of the State Fish Commissioners, and took out a portion of their pay in fish, as I understood it, or as the gentleman has said, but they had some difficulty; they thought they were not getting enough money, and ceased

their operations. They did not confine their operations to wall-eyed pike, as I understood, but caught a large number of other fish, as I am told, including black bass and salmon.

MR. GRANT: They took all kinds of game fish that is in the river—everything.

CHAIRMAN: The Fish Commissioners could have given no such authority, and it is not likely that they did do it.

MR. GRANT: We knew they could not do it, and that is why we got the District Attorney after them, and we had a trap set for them, but they were too quick for us. It is just the same with all net pirates; they say they throw back the game fish, but none are thrown back.

SECRETARY: Mr. Chairman, I have been very much interested in the remarks the gentlemen have made, and the thought occurred to me whether, before we get through, it would not be wise for this committee to recommend to the main body that some action be taken in the direction, of urging upon both New York State and the Dominion Government—not Ontario, but the Dominion, until Ontario can maintain her position there—the question of prohibiting all netting on the St. Lawrence river; that that be one of the steps to be taken by the whole body. We will not act upon the question now, but let the gentlemen think it over.

MR. THOMPSON: I wish to say one word in regard to your suggestion of prohibiting netting strictly to pound nets. When you get down from the lake into the river there is hardly room to set a pound net. Anybody that knows what a pound net is, knows that it takes a great deal of surface to set a pound net. Down the river there is hardly room to set a pound net; you see they have wings that extend out a mile, or three-quarters each way, that covers a mile and a half, and we don't have it in the river. To set such a net as that in the river would very soon exterminate everything that is there; it catches everything, from a fish three inches to two feet long; everything that comes within its radius is swept in. We are not troubled with them much; and one thing occurred to me, that when you come to make your suggestion, you separate the river from the lake; because the river we want free from all netting. You take a gill net out, and the pound net, and you leave the hook net, and the hook net is almost as destructive as the pound net, because they have ears running out each way. They don't cost as much money and catch nearly as much fish. Our game protector, on examination, found four or five nets, and he came to me and wanted to know where the division was, and we got the map and studied it; he said he didn't want to interfere with those nets because they were licensed to net in Canada, and we didn't want to interfere and make trouble with our friends across the river, except we wanted to get together and have a uniformity of law. And in making this suggestion, if you would just go to work and cut the river out from the lake—the river from Kingston down as far as the line extends, as far as Canada extends—you will hit the nail right on the head; you will do just the best thing for Canada and also for the State of New York.

CHAIRMAN: Are there any other gentlemen who wish to be heard? if not, the chair suggests that the committee proceed to practical business.

Senator McNAUGHTON: Mr. Chairman, I only say this with reference to the compilation of game laws; I believe the bill presented, met the approval of members of the legislature of both parties; I have no doubt that it would have become law but for the dead-lock in the Senate. There were some amendments made that perhaps were not necessary. I know Gov. Hill strongly approved the

general features of the bill, and I believe he would have approved the bill if it had been passed. I believe the bill which was lost in the last legislature will be passed in the next one.

Mr. AMSDEN: Mr. Chairman, to make a beginning on the line of action that we want to take in preparing some matter to hand into our main body, I suggest that we take section 132 of this code and discuss it, hearing from Pennsylvania, from Michigan, and from New York State, and any one else who wishes to speak about it. Section 132 of the code reads as follows:

Section 132 of the Act for the protection and preservation of birds and game.

Lake Ontario, Lake Erie and Niagara River, fishing with nets within certain distances from shore prohibited. No fish shall be fished for, caught or killed in any manner or by any device except angling in the water of Lake Erie, within one mile of the shores, or within one-half mile of the shore of any of the islands therein. Nor in Lake Ontario within one mile of the shore, or within one mile of the shore of any of the islands therein, except in the county of Oswego they may be taken one-half mile from shore. Nor shall fish taken contrary to the provisions of this section be knowingly possessed, Pound net fishing in the waters of Lake Erie is hereby prohibited.

CHAIRMAN: I would suggest in addition to what Mr. Amsden has suggested, that the Commissioners from Ontario and from Michigan, take this Code as discussed and look it all over and see how much of it, and what part of it, they will assent to as it is, and report to the central committee, and where their provisions are different from ours, and then they and the New York committee will confer. The section Mr. Amsden has read is the principal part to be legislated upon, the great lakes and the St. Lawrence River, Lake Ontario, Lake Erie, Niagara River, and then the question of the meshes of nets in Lake Erie and Ontario; the meshes of nets in Lake Erie and Ontario should not be less than 4½ inches.

Mr. FORD: I see that, that is practically the law of Pennsylvania to-day with reference to Lake Erie, with the exception that we do not allow fishing within a mile and a-half distance from the shore; the result of that is to give the fish a chance to spawn.

Mr. POST: I think any course that would tend to detract from the work of the States is injurious to any end we all have in view. We can put into the waters there at an expense which the State of Michigan is willing to assume, if let alone, two hundred million of whitefish every year. Wisconsin has done very well; Illinois has practically turned her work over to the United States, and they have quit it; Ohio has practically done the same—they have quit, and turned it over to the United States Government at Sandusky. Here, for instance, is your great Lake Ontario; why may not the United States Commissioners and the State of New York work in harmony, and with the money you can get, stock it with whitefish? We have taken as active measurements as we can with reference to Lake Superior, the very head of these great waters, and which is being greatly depleted. In that action one of the strongest arguments before the Legislature when any objection is made to representative remedies is, why the State of Michigan is paying twenty-five to thirty thousand dollars a year, and here are these fishermen robbing them every year, taking that away from the Legislature. Suppose it was understood the great United States had taken in hand the matter of stocking those waters with commercial fish, don't you see that in the State of Michigan—and it has a great deal of money invested—we would at once lose the lever we have; it would

paralyse our efforts; there is no question about it. As I said this morning, the very direction Mr. Stewart is seeking to have taken in Canada is the very direction we are seeking, and that is to have the provinces or local commonwealths take care of the fishing on their own borders; let them go hand in hand, as they necessarily must. Any movement that may be taken by the United States Fish Commission towards enlarging its work on these lakes will meet with the most hearty co-operation from the Michigan Board, and I am sure will from the Wisconsin Board, and the neighbouring boards. We have had numerous conferences with those north-western commissions and we are in hearty accord with them. I recall the commission at Put-in-Bay; I remember very well how several members of the Ohio commission felt grieved on that occasion; they felt as though the state, instead of withdrawing from the work, ought to increase it. There is no difficulty and no danger whatever of too much money being expended in that kind of work; and it is not enormously expensive, either. The difficulty is to interest people. We have got Michigan pretty well educated. We haven't had much difficulty in several years in getting such reasonable appropriations as we ask for. It would surprise you to know that one of the arguments made use of by one of the patrons of industry, (he was about the only one, that is, he and one or two who stood by him, against the appropriation) was "this propagation of fish is so cheapening the food that it comes in competition with our pork." That is one of the things which we have tried to make the people believe and this man came out and argued it and it had the effect we supposed. I hope the time will come when every fish that is taken, of wall-eyed pike and whitefish, shall have its eggs taken and propagated before it is killed and eaten. We have the control of the whole length of the Detroit River on the American side and that is what we are doing with it; we need, to fill our Detroit hatchery, ten thousand whitefish, ten thousand mature fish. As I said, it takes, to fill our Detroit hatchery, about a hundred bushel of eggs.

All movements this commission will make that will prevent the depletion of our lakes, will have the hearty concurrence of our commission, and we will do anything in reason that shall be recommended, and we flatter ourselves we have some considerable influence with our legislature, too.

I suppose there are more whitefish taken at Sandusky than any other point in the world. The same force that takes and hatches our whitefish, which are taken in the fall, as you know, and hatched in March or April, that same force as soon as the whitefish are out of the jars, takes the wall-eyed pike. It is essential for our inland planting, we take and plant out in our inland lakes, and it is our design, as far as possible, to fill the jars as full as we can. We take off the wall-eyed pike eggs and plant them, and they hatch in about thirty days, and hatch them with but little expense. Suppose the commercial fishing should be taken away from us, that would certainly go with the other, and we might as well hatch whitefish and wall-eyed pike as to hatch either one, and we have a great many inland lakes that are well adapted for the breeding of wall-eyed pike; and the wall-eyed pike, with the scarcity of whitefish, is getting to be reckoned with the whitefish in the market; it certainly stands only second in the market to the whitefish.

Mr. AMSDEN: Mr. Chairman, as Senator McNaughton remarked this morning, there was a time when we had an abundance of food fish in Lake Ontario. He put it back further than I should. Within a shorter time our markets have been supplied from that source with whitefish, and at much less price than at present and with fish very superior to any other.

We now depend on Lake Erie and Georgian Bay. The former are the freshest and best. This has incited the formation of the organization of which I have the honour to be the secretary. We are interested in it, not that we are fish Commissioners, fishermen, or fish dealers; we are simply fish-eaters, fond of the whitefish, and want it fresh, plentiful and cheap for ourselves and our neighbours—the poor and the rich. In the belief that we can do some good to the community, we have put our heart and soul into this work and determined to bring about a restoration of cheap fish food to the depleted waters of Lake Ontario.

In the meeting to-day we see that our labours have not been in vain, and we feel most grateful to you, our neighbours across the waters and East and West, for your kind, earnest co-operation and interest in our endeavours, and more than pleased to see the work enlarge and extend to all the great lakes. It is a grand, philanthropic work that we can well be proud of. While our governments are giving so much thought and expense to the advancement of land farming, our vast water farms should not be neglected. Fish is an equally important article of food. It is a very necessary diet—essential to health. It would be better if we all consumed more fish and less meat. Scientists tell us that for our own good, as a matter of health, we Americans eat far too much meat. Relatively, fish to-day is more expensive than meat, and unless reform comes soon, fish will be out of reach of the poor. Our markets must depend on the great lakes; there is no other source for market purposes for fresh water fish. Taking Lake Ontario as you find it to-day, almost destitute of fish food—nothing but herring and bloaters in it now—what would be your idea for immediate course for United States and Canada to pursue to bring about a restoration of those waters?

MR. FORD: The first thing I would do would be to put whitefish fry in there by the million.

Q. Before you protect the waters?

A. You appreciate that it takes three years for the fish to come to maturity; you would not see any effect until after three years—probably the fourth year. Some five years ago Lake Erie was almost depleted of whitefish, they had moved along up the lake; and then they began to fill the plants with whitefish, and the fishermen moved their nets down to Lake Erie, and for the last five years our Detroit river planting has fish that come down to Lake Erie. The plants of the United States Commission, of the Ohio Commission, and the Pennsylvania Commission, have all been almost largely in Lake Erie, and all helped to stock Erie. They probably do not go through Lake St. Clair to Lake Huron, but probably go to Lake Erie. The whitefish in Lake Erie is the best proof of the success of the propagation of whitefish in the world. In reference to the brook trout, I will say that forty years ago there were no brook trout south of the Boardman river, which is nearly on a level with the upper peninsula, and to-day there is fishing almost down to Kalamazoo, in almost every stream in the state.

MR. AMSDEN: Here is the United States government which has offered to come in and establish a hatchery on Lake Ontario. They say, first, that New York must pass protective laws before they take a step in it.

MR. POST: I should certainly do it. Your State Board is an excellent Board. I was a good deal pleased with what Senator McNaughton said. He said there has been a great deal of money expended; well, it has not been as well directed as in some other States, but it is the pioneer State: it has taught us all what to do. We are pupils of Seth Green. And of course New York has had to stand a good part of the expense in the first place, and a good deal of that has been expended

for our benefit, because we have profited by what New York did on the start, and I think you would have very little difficulty in interesting your State Board in establishing a whitefish hatchery on Lake Ontario.

Mr. SKINNER: Mr. Chairman, in answer to the question, "At what point does the St. Lawrence river cease to be international water?" I am credibly advised that it is on the Canada side near the village of St. Regis where it crosses the 45th parallel, and at Tibbett's Point light-house on the United States side, so that there is about 115 miles of the St. Lawrence river international waters.

On motion of Mr. Amsden, it was decided that the meeting should adjourn, to meet at Hamilton, Ontario, on 8th December. Carried.

Votes of thanks were then tendered to the Chairman and Secretary, after which the meeting was adjourned.

THE FOLLOWING WERE ADOPTED as recommendations to the meeting at Hamilton, Ont., December 8th:

Moved by Mr. A. D. STEWART:

Resolved, That provisions ought to be introduced into the laws of all the States represented in this conference, forbidding the taking and having in possession of salmon trout and whitefish of the weight of less than two pounds each, and bass of the weight of less than one pound, and blue pike of less weight than three-quarters of a pound.—Carried.

Moved by Mr. POST:

Resolved, That it be recommended to the Congress of the United States the importance of authorizing and directing to be made, through the United States Fish Commission, a full and careful biological survey of the great lakes, with a view of determining the character and plentifulness of the food, and the habits and migration of commercial fish.—Carried.

Moved by Mr. POST:

Resolved, That the members of this conference from the Dominion of Canada and the States represented, respectively, be requested to take the text of the Game and Fish code prepared by the New York State Commissioners, and consider the same with reference to the applicability of its provisions to their own purposes, and to indicate thereon what provisions may be acceptable to them, and what changes they may deem advisable to be made to suit their separate wants, so that at the final meeting of the conference an agreement may be come to, in respect to all the provisions upon which legislation is desired.

Resolved, That this body regards with disfavour any movement looking towards the turning over to the United States government, the work of the State Commissions in propagating and planting commercial fish in the great lakes;

That the jurisdiction over the lake fisheries belongs naturally to the adjoining States, whose interest in their success is paramount to that of the United States as a whole, and,

That there is an abundant field for the concurrent action of the bordering states and of the general government, and anything which would detract from the state's interest in this matter will be detrimental to the end aimed at of restocking the waters of the Great Lakes.

And we recommend a course which will encourage and stimulate greater interest and larger expenditures in this great work by the several bordering States, and at the same time, increased interest in the subject by the United States Fish Commission.

Resolved, Further, that this body earnestly approves of the action of congress in making an appropriation for the establishment of a hatching station on or near the St. Lawrence river for the propagation of white fish and other commercial fish ; and of the purpose of the United States Fish Commissioner to carry out the provisions of that appropriation ; and we see nothing in this movement that can in any degree interfere with the jurisdiction of the States in the premises, or to affect in any way unfavourably the work of the States in the protection, multiplication and distribution of valuable food fishes.

Resolved, That if a practical agreement can be had in regard to the provisions of laws for the regulation of the fisheries of the international waters, it is nevertheless not practicable by reason of the differences in territorial extent and mode of legislative procedure, to settle upon precise statutory provisions in relation thereto, which shall apply to all ; and therefore it is recommended that each Dominion, Province, and State representation make such recommendation touching its particular jurisdiction as shall apply to the case ; leaving to each representative to frame the matter into a law according to the forms and circumstances, for the action of the proper legislative body.—Carried.

Moved by Mr. FORD :

Resolved, That we recommend to the Fish Commissioners of Canada the adoption of the following resolution for the St. Lawrence river, viz. : That we ask of the Canadian Fish Commissioners a prohibitory law that will prohibit the use of all kinds of nets in the Canadian waters of the St. Lawrence river the same as the New York State codification bill now recommends ; we also ask of them to include the same time for their close season on the St. Lawrence river for all kinds of game fish that the above named codification bill recommends.—Carried.

(EXTRACT FROM UNION AND ADVERTISER, ROCHESTER, NOV. 11TH.)

TRIP TO CALEDONIA.

FOOD FISH COMMITTEE VISITED THE STATE HATCHERIES.

NAMES OF THE GENTLEMEN PARTICIPATING.—INTERESTING FACTS IN RELATION TO FOOD FISH.—CLOSE OF THE SESSION.—RESOLUTIONS ADOPTED THIS MORNING.

Soon after 9:15 o'clock this morning a special train drew out of the Buffalo, Rochester & Pittsburg railroad depot on West Avenue. On board were A. G. Yates, the president of the road, with a number of gentlemen as guests, including members of the committee on protecting the fish of the Great Lakes and several

Rochesterians interested in the committee's work. The names were: General Richard U. Sherman, New Hartford, N. Y., of the New York State Special Fish Commission; A. D. Stewart, Hamilton, Ont., Ontario Game and Fish Commission; Dr. H. M. Smith, Washington, United States Fish Commission; G. M. Skinner, Clayton, N. Y.; R. P. Grant, Clayton; W. H. Thompson, Alexandria Bay; Frank J. Amsden, Rochester, secretary of the committee; Postmaster Reynolds, William Purcell, Ex-Congressman Baker, W. C. Dickinson, Wm. F. Balkam, C. H. Babcock and Arthur Luetchford. Monroe A. Green had proceeded ahead to the destination of the party which was the State Fish Hatchery at Caledonia. The active labours of the committee for the present, ended with the adjournment taken at the Chamber of Commerce rooms yesterday afternoon.

At the State hatchery the party were received by Supt. Monroe A. Green and shown the process of producing fish from the spawn, together with everything pertaining to the enterprise.

After spending two hours in inspecting the ponds and streams, the party returned highly delighted with their visit.

As the train reached Rochester, the visitors from abroad held a meeting in the saloon of the private car, Gen. R. U. Sherman, of Oneida, in the chair, when Mr. A. D. Stewart, of Hamilton, Ontario, moved, seconded by Dr. H. M. Smith, of Washington, D. C., the following resolution, which was unanimously adopted:

Resolved, That the thanks of this International Conference be expressed to the Directors of the Rochester & Pittsburg Railroad Company for placing at the service of the members a luxuriously equipped special train for their conveyance to and from the Caledonia fish hatchery, and to Mr. A. G. Yates, the president of the company, for his courtesy in accompanying the party and contributing so much to their comfort.

We desire also to express to Supt. Monroe A. Green our thanks for the facilities afforded us to examine the work at this parent establishment, which we trust will long stand as a monument to the memory of his deceased brother, Seth Green, who was the first in this country to establish artificial fish culture.

Our thanks are also especially due, and are gratefully tendered to Mr. D. W. Powers for the privilege courteously afforded of inspecting his wonderful art gallery—an institution in which all the people of Rochester, equally with the founder should feel an honourable pride.

—Carried.

At the afternoon meeting when the codification of the Game and Fish Laws was under consideration, Senator McNaughton stated that in his opinion the Bill reported by the special committee, consisting of Messrs. Sherman, Roosevelt and Whittaker, which passed the Assembly at the last session would have passed the Senate if it had not been for the deadlock, and that he had no doubt but that at the next session of the Legislature the Bill reported by the special committee would become a law. That Bill not only codifies, but simplifies the existing Game Law of the State, and the great work performed by the Commissioners can readily be seen when it is stated that the proposed Bill amends or repeals 239 special acts or parts thereof relating to Fish and Game Laws.

In support of the suggestion of Senator McNaughton at the meeting of the Fish Commissioners yesterday, that particular and immediate attention should be given by the Fish Commissioners of New York State to re-stocking Lake Ontario with whitefish and salmon, and the Hudson River with shad, Mr. Henry C. Ford, one of the Fish Commissioners of Pennsylvania, stated that the Commissioners of Fisheries in that State some years ago turned their attention to re-

stocking the Delaware River in that State with shad with the following result, and that stream is not as favourable for propagation of shad as the Hudson :—

Value of shad fisheries in Delaware river in 1880....	\$ 80,000 00
“ “ “ “ 1887.....	300,000 00
“ “ “ “ 1890....	600,000 00
“ “ “ “ 1891....	750,000 00

The Commissioner said that the cost of shad by reason of the great increase in the supply, was reduced, and that Delaware River shad were now sold in large quantities in the fish markets of Cleveland, Chicago, and other western cities.

Commissioner Ford also stated that the Pennsylvania Commissioners some years ago had taken in hand the re-stocking of Lake Erie with white fish, and as a result, the cost of that fish in the markets on the shore of Lake Erie bordering on the Pennsylvania line was reduced one-third.

A fair example of what may be expected from well-directed and systematic fish cultural work :—

FISHING WITH PITCHFORKS—HOW SHAD MAY BE CAUGHT IN SOME WATERS IN CALIFORNIA.

Colonel Marshall McDonald, United States Fish Commissioner, is deeply interested in the results of experiments in the acclimation of shad on the Pacific coast. Until 1880 the fish commission had been engaged in the propagation of shad with a view to their introduction and acclimation in those river basins of this country in which the species is not indigenous.

Before the Commission had been obliged to overcome by artificial means the rapid decline in the productiveness and value of the shad fisheries in the Atlantic coast rivers, it had the satisfaction of observing on the Pacific coast the valuable results of well-directed efforts in acclimation.

Prior to 1871 no shad were found in all the west coast waters, but in that year 1,200 fry were transported in a couple of tin cans from the Hudson river, and planted in the Sacramento at the railroad crossing at Tehama, and the first consignment was followed by others in 1873, 1876, 1878 and 1880 aggregating half a million.

These slender colonies were less than one-half of 1 per cent of the number turned annually into the eastern streams of the country by the commission, but yet they have been sufficient to stock the coast with shad, which have multiplied and distributed themselves along 2,000 miles—from the Golden Gate to Vancouver Island. They are abundant in some of the rivers, common in most of them, and occasional ones may be found everywhere in the estuaries and bays of the long line of coast.

Commissioner McDonald has just received from the California commission a report in reference to the abundance of shad in the Sacramento river, which

reads like a California exaggeration, but is from thoroughly accredited and attested sources of information. This is what the state commissioner writes under date of 12th November, 1890 :—

“If I were to say that our shad, which were planted here some ten or more years ago, are the commonest fish in the market, as well as the cheapest, it would be doubted, and if I said that the shad during the spawning season come into our trout streams, many miles from salt waters, in such numbers that barrels of them might be taken with the aid of a pitchfork, (that would be called a California story), nevertheless it would be a true one. No one away from here can appreciate the extent to which the carp, shad, and catfish have increased in our waters. I can well remember, and not so very long ago, when I paid \$1.50 for a pound of shad. To-day you can get an eight-pound shad for 50 cents.”

But this is not the only point of interest about the shad of the Pacific. Before the experiments were made there, it was a dictum that fish planted in a river would return to it when mature for the purpose of spawning. But the California experiments have demonstrated that this instinct of nativity, should it really exist, is, in this case, dominated by other influences, which have dispersed the shad planted in the Sacramento widely beyond the limits which had been assigned to them and in a most unexpected direction.

The reason for this is probably to be found in the general influences of the Japan current, which brings the warmth of equatorial Asia to temper the extremes of Arctic climate on the southern shores of the Alaskan peninsula, and thence sweeping to the south, carries tropical heats to the latitude of San Francisco. Repelled on one hand by the low temperature of the great rivers and fringe of coast waters, and solicited on the other by the equable and higher temperature of the Japan current, the shad have become true nomads, and have broken the bounds of the hydrographic area to which we had supposed they would be restricted. Following the track of the Asiatic current, and finding more congenial temperature as they progress, it is not unreasonable to expect that some colonies will eventually reach the coast of Asia, and establish themselves in its great rivers.

REPORT OF THE MEETING OF THE GAME AND FISH COMMISSIONERS
HELD AT HAMILTON, ONT., DEC. 8TH, 1891.

The final meeting of the International Fish and Game Convention was held in the City Council chamber at Hamilton, Ontario, on the afternoon of December 8th, 1891. In the absence of the Hon. R. B. Roosevelt, of New York, Senator McNaughton, of Rochester, was elected chairman. There were present at the meeting: Hon. Senator McNaughton, Frank J. Amsden, Rochester. N. Y.; Geo. Skinner, Clayton, N. Y.; Dr. H. M. Smith, United States Fish Commissioner, Washington, D. C.; Hon. Herschel Whitaker, President of the Michigan Fish Commission; J. H. Wilmott, Beaumaris, Muskoka; Dr. MacCallum, Dunnville, Ont., and A. D. Stewart and R. A. Lucas, Hamilton, Ontario Fish and Game Commissioners.

On taking the chair Senator McNAUGHTON said: "I thank you, gentlemen, for this unexpected honour. I am confident that I voice the feelings of every gentleman present, when I say that it is a matter of great regret that Mr. Robert Roosevelt, the permanent president of your association, is not present, and it is also a great loss to us that Gen. Sherman and Judge Whittaker, of Albany, are absent. Very much is due to Gen. Sherman for his intelligent efforts in the promotion of the objects of this association at Rochester, and I am sure Judge Whittaker would have added much to the interest of the proceedings if he were here, as he was a member of the committee of the State of New York that codified the Fish and Game laws. I am glad we have Dr. Smith, of Washington, with us, and think the meeting should in some way show its appreciation of his presence by a vote of thanks before adjourning, because his duties are such, that I am sure it is with extreme difficulty that he meets with us at this time. Being a member of the United States fish commission, his heart is right in the work before us, and I feel that much credit is due him for honouring us with his presence to-day.

The motives actuating me in being present at this meeting are, first, to show my appreciation of the invitation of the president, Mr. Roosevelt, supplemented by the personal request of your genial secretary, Mr. Stewart, and I thought it would be very discourteous after receiving the pleasant letter from your secretary if I should not make a great effort to meet with you to-day. I was also anxious to meet in this beautiful and prosperous city, those who are interested in the great question that has brought us together. The second motive that induced me to come, was to testify by my personal presence to the interest I have in the question under discussion to-day, and other matters connected therewith, which will be brought before you. And what I have to say, I desire to be interpreted as a pledge and earnest that in every way that is possible I will unite with you gentlemen in securing such legislation as is necessary, to secure reciprocal laws between Canada and the states bordering on the great lakes, for the preservation and protection of fish and game. The meeting at Rochester awakened great interest in this subject, and I am confident it resulted in very great good. The comments which I have heard and read on the proceedings at that meeting have been favourable. I have yet to see or hear adverse criticism on the action taken; on the contrary the suggestions were approved, and I believe the platform laid down there will be one of great value, not only to the state of New York and Canada, but to the other states bordering on the lakes, for I believe it is a subject that is paramount in importance among the economical questions of the day. I approve of the tone and scope of the

resolutions to be submitted at this time. They have not yet been discussed, but I think they will be satisfactory to those who take any interest in the question before us. The advantages to the great mass of the people in re-stocking Lake Ontario and the St. Lawrence, and the great chain of northern lakes with food fish is more apparent to my mind than ever before, because I am satisfied that the capabilities of Lake Ontario and the northern lakes for propagating and producing fish have not been over-estimated. A very prominent gentleman in Orleans county, Mr. J. H. White, informed me that in 1846 he saw sold in New York City on Wall street, salmon trout from Oswego. They were caught at a point near Oswego, carried in a sleigh to some point on the Hudson River, from there to New York in a wagon, and sold in Wall street at fabulous prices, the purchasers stating that they were the finest fish they ever saw. Mr. M. F. Reynolds says that as late as 1861, Mr. Clapp, of New York, proprietor of the Everett House, asked him to make a contract with fishermen at Rochester and arrange for a supply of salmon trout for that hotel, which was for a long time thus supplied. These are facts of great importance as showing the quality of Lake Ontario fish. I referred at Rochester to the importance of stocking large bodies of water. The argument to my mind seemed unanswerable, for the reason that if the bodies of water in which you seek to raise and propagate fish are restricted, the quantity of fish produced must be also restricted and limited. But the boundless expanse of water in Lake Ontario, renders it admirably adapted in that respect to the culture of fish, and well adapted for propagating and containing food fish. It is for that reason I made the suggestion about stocking Lake Ontario and the northern lakes with food fish. It is admitted that the common brook trout is the handsomest and best pan fish there is, but it cannot be raised in sufficient quantities in this country to become food for the great mass of fish consumers, and it is useless, in my judgment, to attempt to make it so, until we have stocked the northern lakes, and the whitefish, siscowet herring and salmon are restored to the number so abundant thirty-five or forty years ago. I need not tell this audience that we are not pioneers in fish culture. It is certain that nearly 3,000 years ago fish culture was an important adjunct of Chinese civilization, and since then the Chinese have turned their attention to stocking their large streams and bodies of water, so that fish can be purchased and obtained there much cheaper than in this country. This speaks volumes for a country that maintains over 450,000,000 people. A Chinese dignitary who visited the Fisheries Exhibition at London, England, was able to give the commissioners of that country important points, especially about the preservation of small fry in streams. He expressed great surprise at the high prices obtained for fish, saying that in China they can be purchased for one-fourth or one-third of the price. Fish are used as a daily diet, and the demand would be very great if the prices placed them within reach of the mass of the people. You will pardon me for calling attention to one fact that will be significant. I am impressed with the idea that since fish culture and propagation is carried on so extensively in this country, the citizens of the State of New York and Western States will realize the importance of keeping pure the large bodies of waters near populous cities. It is a fact that in Lake Ontario, the Genesee river, Irondequoit Bay, and in bodies of water in the vicinity of Rochester, large quantities of deleterious substances are carried into the waters annually, and if it is deleterious to fish life it must be so to human life within reasonable distances of those bodies of water. An individual has no more right to pollute such bodies of water than to put poisonous substances into a well or stream supplying a family with water. In my judgment the streams of New York State, Canada, or Michigan, are not fit depositories for sewerage, and the time will come when attention will be called to this

from the fact that interest in fish culture is increasing. In an Eastern paper I read lately that a New Haven physician had come to the conclusion that clams bred typhoid fever. He concluded so from the fact that a patient had dined heartily on raw clams taken from a place where the water was impure, and his conclusion was based on facts which he deemed sufficient to prove that the clams thus fed produced typhoid fever. Streams where food fish are taken should only contain substances proper for fish food. I must apologize for detaining you with these desultory remarks. Being honoured with the position of Chairman, I thought I might not have an opportunity to speak of them before the close of the meeting.

Secretary STEWART: Mr. Chairman and Gentlemen, I have here the report of the meeting of the special committee appointed by this Convention, which was held on the 10th of last month, in Rochester. I presume you all have copies of this report, and it will be unnecessary to read it. But I might say that the special committee duly met in Rochester, in the Chamber of Commerce, and I have much pleasure in saying that the meeting was a thoroughly representative and unanimous one, and I think good will come of it. Before reading to the meeting the reports or motions which we offer for adoption, I have a report written by Gen. Sherman, Chairman of the Special Committee, who is confined to his house by illness, which is to be read to the meeting:

REPORT:

To the joint commission appointed to confer on the subject of Fish protection in the International waters between the Canadian Provinces and the State of New York:

The committee appointed by the conference of representatives from the respective commissions of Canada and the State of New York, to consider and recommend measures looking to the adoption of uniform laws for the protection, preservation and multiplication of the food fish supply of the international waters lying between these respective countries respectfully reports:

That they have given to this subject careful consideration, and in the light of facts have not deemed it practical to fix on such provisions in detail as would be requisite to form a uniform code applicable to both countries. Special needs depending upon geographical conditions, on climate, on different prevailing modes of legislation, and of administering laws, forbid such uniformity, but approximation in general features and leading measures, may be made to go far towards the attainment of the practical ends desired.

FALLING OFF OF FOOD FISH SUPPLY.

That the food fish supply of the great lakes has been for the past thirty years suffering rapid diminution, is too apparent to need statistical proof. On the New York side of Lake Ontario, where formerly salmon trout, whitefish, and even the lordly salt water salmon were so abundant as to furnish all the near markets with an abundant supply at prices within reach of the means of the day labourer, the product now scarcely recompenses the netter, and these fish, once so abundant and cheap, are no longer available for food to the multitude, but have become table luxuries to be enjoyed only by people of ample means. On the Ohio side of Lake Erie, there has been a nearly equal falling off of the higher grades of fish, but there still remains, on account of the greater fecundity of

the coarser kinds, a fair supply of what are commonly known as pickerel blue pike, pike perch, and bass, which still afford a fair market stock at moderate cost. Yet so enormous has become the draught on the north shore and islands of Erie, that the cry of scarcity is already sounded from there. Farther up the great lakes, the stock of whitefish is yet abundant: not, however, by reason of providence in the use, but from the well sustained efforts that have been made by the states of Michigan and Wisconsin, and on a lesser scale by Ohio and Pennsylvania to keep up the stock by artificial propagation.

On the Canada side of these waters, the supply, though showing each year an additional falling off, yet holds good for profitable netting, and it is from the fisheries of Canadian waters that the principal market supply for the State of New York comes. It may not be long, however, before the necessity of self-protection will force the Dominion Government to shut out exportations of fresh fish. Such a condition should be foreseen in time and met by timely measures.

CAUSE OF THE GROWING SCARCITY.

The cause of the growing scarcity of food fish is too apparent to need discussion. The rapid and enormous increase of population in all the States and Provinces bordering on the great lakes, has caused a proportionately increased demand for food of all kinds. The increased want is made up in respect to the products of the soil, by the constantly enlarging range of cultivation, and by improved agricultural methods, but in respect to the products of the waters there has been no such extension of culture, and the field remains where nature placed it years ago, when there was comparatively no demand for fish as food for man.

THE REMEDY.

Given then that the food fish supply needed for the consumption of the border States is approaching practical exhaustion, what is the remedy? Two leading measures are obviously necessary. They are protection and multiplication, and to make these effective, concert and harmony of action is necessary between all the Government authorities interested.

Of the unnecessary causes of depletion, it is evident from observation and experience, that the practice of in-shore netting is the greatest. The setting of pound nets of small mesh with leads extending often a mile or more from shore, causes the capture of myriads of young fish scarcely fit for human food, but which, if left to develop on their natural feeding grounds would add immensely to keeping up the market supply; and the innumerable fykes, trap and hoop nets, and other effective devices for the capture of coarse and immature fish which seek their food in the shallows and along the shores, is another of the leading causes of depletion. The use of small mesh gill nets is also a source of material waste. The small fish taken in these nets are of but little value for food, and are a nuisance to the market men on whose hands they are thrown.

The remedy for the cure of the ills stated, is to prohibit the use of nets of any kind, within one mile of the shore line of the great lakes and the rivers connecting them and the St. Lawrence river, and to require that the mesh of all pound and gill nets set outside this limit, shall be not less than three and one-half inches stretch, and as an effective aid to the enforcement of such a regulation, to make illegal the sale or possession of any fish of less than specified weights, as follows, viz:—

Salmon trout, two pounds.

Whitefish, two pounds.

Bass, one pound.

Blue pike, three-fourths of one pound.

None of which fish would be likely to be held by a mesh of three and one-half inches stretch.

It is believed that were in-shore netting to cease, there would be scarcely need of a closed season for spring spawning fish, such as pike (commonly called pickerel), pike, perch and bass, as the natural fecundity and development of these fish are so rapid as to be proof against any netting that does not destroy them in their infancy.

CLOSE SEASONS.

As to close seasons for fall spawners, such as salmon trout and whitefish, no changes from existing regulations where close seasons are provided, are demanded. Exact uniformity cannot be prescribed on account of differences in temperature and latitude or other conditions which influence the spawning seasons.

NECESSITY OF INCREASED PRODUCTION.

What has been above suggested, by no means embraces all the measures needed to keep up a food fish supply in the International waters, adequate to the wants of the population who have only that source to look to. Artificial production, and that to the largest available extent, must be established and prosecuted. The States of Michigan, Wisconsin, Ohio and Pennsylvania have already proved what great results may be reached with comparatively moderate expense, by suitably located and intelligently managed hatching stations. But the Canada provinces and New York are yet in the background in this vital work. Relief is promised to New York by the proposed establishment at the east end of Lake Ontario, by the United States Fish Commission, of a whitefish hatchery, of an hundred millions annual capacity. But no steps have yet been taken by the Dominion authorities to second the great work so auspiciously commenced by the states of the North-west. It is to be hoped that the agitation of this subject by the present conference will tend to awaken an interest in the important work which Canada may do in the premises.

PROTECTION.

Laws serve no good purpose while they remain dead letters on the statute books. If we would have efficient fish protection we should provide not only wise statutes but the constant means of enforcing them. The system in vogue in the State of New York and which has been incorporated in the revised code recently framed by the Special Commission of that State, with improvements, is recommended to the consideration of all the states represented in this conference. The system is, in brief, a distinct protection department, acting by itself and within itself, its members holding office only by good conduct, and having a head to direct, and a working force at all times prepared for duty, properly compensated by the state for service and expenses, and with the constant duty of watching for, and preventing violations and conducting prosecutions.

APPLICATION OF REPORT.

The subjects and recommendations of this report are intended for the consideration not only of those members of whom the conference was originally officially composed, but of all who by invitation have since become officially connected with it as representatives of the interest of their respective States.

(Signed)

RICHARD U. SHERMAN,

On behalf of Committee.

On motion of Mr. Stewart, seconded by Mr Wilmott, the report was received and adopted.

The secretary read a letter from H. H. Warner, President of the St. Lawrence Angling Association, which, on motion, was received and ordered to be published.

ROCHESTER, N.Y., Dec. 7th, 1891.

A. D. STEWART, Esq.,

Game and Fish Commissioner, Province of Ontario, Court House, Hamilton, Ontario.

DEAR SIR,—During the past summer and fall I have been absent in Europe, and have not had laid before me the action of the International Fish Commissioners, or the Ontario Fish Commissioners, and I find it impossible to attend the meeting in Hamilton to-morrow, but I wish to express to the different Commissioners my hearty approval of their efforts to devise ways and means for protecting and stocking the waters in your jurisdiction, and I hope you will devise ways and means that will reach the aim we have in view.

I am in favour of using every means possible for stocking the inland waters of our country and Canada, at the same time, I do not think it wise to allow the fish we have to be destroyed while we are using our efforts to propagate fish that can be taken out at the will of the netter. Only a few years ago it was a very easy matter to secure sufficient fish—white and lake trout—from the lakes of Ontario to supply this section of the country and Canada, but it is a well-known fact that to-day fishing for white and lake trout is almost abandoned from the fact that there is not a sufficient quantity of fish worthy the efforts of the netters. Whitefish and lake salmon are easily propagated, but there is a species of fish in lake Ontario that is very difficult to propagate, and which is about the only game fish left for anglers; and I think it the duty of every citizen of both countries to rise up in arms for the purpose of defending this celebrated fish, namely, the black bass. When this fish is once exterminated, or nearly so, it will be about as difficult to restore it as it has been to restore many of the game birds and animals of this locality, which have become practically extinct. Perhaps I go to the extreme, but I am willing to say that I have very little confidence in the honour of the average netter or fisher, for market. Some argue that fish permitted to be netted should be governed by size or weight. I will admit in regard to the whitefish and lake salmon, that this may be about the only means of controlling the catching and netting of them, but I question very seriously if allowed to catch down to within a pound or two pounds, whether they will throw them back, but will destroy them, or injure them in taking them from the nets. I am satisfied by carefully

studying the subject, that your most serious attention should be given to preserving what we have left, namely, the black bass, and I think it would be wise to pass rigid laws prohibiting inland netting, netting along the shoals and shores of islands in lake Ontario, and the river St. Lawrence. I would recommend and advise the prohibiting of all kinds of netting at all times within three miles of any shore. It is a well known fact that during certain seasons of the year, black bass approach the shore for the purpose of spawning, and after the spawn has been hatched the parent fish remain to guard their offspring for a considerable time until they are able to care for and protect themselves from their various enemies of the fish kind, and in the event of the parent fish being destroyed it is self-evident that the young would be left to the mercy of their numerous enemies and would be destroyed. In addition to the foregoing reasons, at certain seasons of the year, depending on the temperature of the water, bass approach the shoals and shores of islands for feeding purposes, and this furnishes an opportunity for the wicked and ever present netter to destroy more or less of these noble game fish, which are becoming so rapidly extinct.

This is a very important matter and I trust you will pardon me if I again urge the fish Commissioners to investigate the matter and use every means to protect the fish above referred to, which I am confident, unless something is done very soon, will become as completely extinct as whitefish in Lake Ontario. I think this question should receive your immediate attention and, if possible, laws carrying this into effect, should be passed during the coming winter. I consider even another year's delay very dangerous, from the fact that fruitless efforts to secure paying quantities of whitefish and lake trout has caused netters to turn their special attention to capturing the only remaining fish, namely, the black bass and wall-eye pike, which seem to be about all the game fish we have left.

Wishing yourself and the Commissioners all possible success,

Yours very respectfully,

(Signed,) H. H. WARNER,

President Anglers' Association of the St. Lawrence River.

The following letter was also read from Mr. James Nevin :

MADISON, WIS., Dec. 7, 1891.

A. D. Stewart, Esq., Secretary Joint Convention, Hamilton, Ont.:

DEAR SIR,—Your communication of 25th ult., at hand, and contents duly noted. We recognize fully, the importance of the meeting which is called to discuss the fish question, which is of so much commercial value to the several States bordering on the great lakes and Canada.

In the fall of 1884 our Commissioners took the initial steps by calling a meeting of Commissioners of the several States. They also invited fishermen, who were directly interested, to meet and discuss various measures before the meeting in regard to making laws for the better protection of the fishes of the great lakes. The meetings which were held at Detroit, Mich., and Milwaukee, Wis., accomplished much good, but to get uniform laws for the several States and Canada is an impossibility.

The greatest evil that exists to-day in the matter of replenishing the waters of the various lakes with whitefish is the *pound nets*; for the simple reason that they catch both large and small. As long as the *pound nets* are allowed to remain in the waters in their present form, there is no use in attempting to replenish the waters with whitefish.

I have been in a trap-net boat when 2,500 lb. of small whitefish were taken out of one net; and of the 2,500 lb. there were not 50 lb. of No. 1 whitefish, and a No. 1 whitefish is a fish that will weigh one and one-half pounds.

You can regulate the matter by having a four and one-half inch mesh, so that all the small whitefish will pass through. If the fishermen had to depend for their living upon what whitefish they catch they would *starve*.

There are other fish that the fishermen are fishing for as well as whitefish, *i.e.* HERRING, and commercially speaking, they amount to as much as the whitefish for lakes Michigan, Huron, Erie and Ontario. Therefore a general law, calling for a four and one-half inch mesh, will not answer.

My opinion is that we want efficient wardens appointed by the Commissioners of the several States, not politicians, but men who know a *whitefish* from a herring, and a *lawyer* from a sturgeon, men who are thoroughly posted as to the class of fish that are caught in their respective jurisdictions.

I might have a fishing ground where I do not catch any fish but herring and rough fish. Tom Brown four miles distant might have some pound nets; nets that would catch a thousand tons of small whitefish during the months of May, June and up to the middle of July, when the small whitefish come up near the shore to feed. After that time he would catch herring, large whitefish, and such other fish as would come to his net but no small whitefish.

In my opinion Tom Brown should not be allowed to place his nets in the water until after the first of August, unless he fished with a four and one-half inch mesh during the months of May, June and July.

I recognize the fact that a law of this kind could be enforced in Canada; but not in this country where every fisherman is a politician.

If my views are carried out it would require great vigilance on the part of the wardens to see that the laws were thoroughly enforced and no partiality shown.

I also think we ought to have a closed season for all our commercial food fishes and it should extend long enough to cover the whole spawning season.

I know personally that F. W. Wicher (who was Commissioner of fisheries in his time) would never have allowed pound nets to be set in the waters of Canada if he could have had his way.

I am very sorry that none of our Board can attend this meeting.

If you think my views on this subject worth anything, you may present them to the meeting.

Nothing would give me more pleasure than to attend this meeting, as it would seem like being back home again.

With best wishes for a well attended and productive meeting,

Very respectfully yours,

JAS NEVIN,

Superintendent of Fisheries for State of Wisconsin.

Mr. SKINNER, Secretary of the St. Lawrence Angling Association, read the following selections from the "American Fish and Game Warden," in reference to the relation of the American Fishery Society to protective fish laws:

"I firmly believe that to-day there is less known about the spawning seasons of our game fishes by fishermen generally than about the playing of the crack base ball teams.

"I speak feelingly and from experience on the subject. As angling editor of *Shooting and Fishing*, I often write privately to correspondents, who ask about the spawning season of our best known fishes rather than expose their ignorance in print.

"The saving of a game and food fish from extinction is certainly a 'question of an economic nature, and I believe the Black Bass is slowly being whipped from the waters of this country because of inadequate laws, or no laws. This is partly through cupidity, partly through ignorance. But black bass require something more than a mere close season to cover the act of spawning, for they watch over their young after they are hatched, the only fish protected by law that do, for I am not aware that the sunfish and bullhead are protected. If black bass are taken a week after the ova is hatched, every black bass fry will be eaten by other fishes always in wait to do this very thing. As a fact, I have seen a bass with young just hatched on the 25th day of August; but this was probably an isolated case, I have known a bass to remain with its young for six weeks, and this is probably not an unusual thing."

Secretary STEWART: There are several motions which we passed at the meeting at Rochester which will now, I presume, be presented for discussion or adoption by this meeting. I will move the adoption of the following:

"*Resolved*, That provisions ought to be introduced into the laws of all the States and Provinces represented in this Conference, forbidding the taking and having in possession of salmon trout and whitefish of the weight of less than two-pounds each, and bass of the weight of less than one pound, and blue pike of less weight than three-quarters of a pound."

Dr. SMITH: I would ask if blue pike should be protected to the exclusion of better pike, such as the wall-eyed pike. I think that resolution should apply to all fishes of the pike family.

Secretary STEWART:—The addition of the blue pike was made at the suggestion of Gen. Sherman, but we can amend this if some one will make a motion to that effect.

Dr. MACCALLUM: Should any of these be protected? Are they not the hawks of the fish tribe? They are very destructive to smaller fish.

Secretary STEWART: I may say that, as the mover of that resolution, the principal reason which led me to move it was that, in common with many other fishermen, and more or less observing men, I have come to the conclusion that a great deal of good can be effected by restricting the taking of fish in regard to size or weight. We have had it come under our observation during the fishing season that innumerable fish are slaughtered of a very small and insignificant size—too small to be of any use as supplies to the market, and which, if left alone, would propagate and be prolific, and be of use in their own day. The idea is that fishermen should be restricted in their fishing by putting some limitation on the size and weight of the fish to be caught. Then Gen. Sherman thought that the blue pike should be added to these in the list.

Mr. WHITAKER: It is true that the blue pike of commerce are unquestionably carnivorous, and if that was the sole reason why our attention

should be drawn to these fish, it may probably be well to strike them out. There are quite a number of varieties of pike, and the blue pike, I take it, is a variety of the wall-eye. Probably the fifth fish in importance of the great lakes are the wall-eyed pike, the order being whitefish, salmon trout, herring, sturgeon, and wall-eyed pike. As a factor of cheap food for the people, I take it that it is within the province of a body of this kind to enforce the preservation of marketable fish, and in my opinion the wall-eyed pike is such a fish. If it is a good argument that carnivorous fish should not be protected, that argument would apply to the bluefish of the ocean, one of the finest table fishes there is. It would seem that there is no just reason for striking out the blue pike for that reason alone.

Dr. SMITH: Owing to the scarcity of whitefish and salmon trout, statistical tables I have recently worked show that the wall-eyed pike and its variety the blue pike, constitute more than one-third of all the commercial fish in Lake Ontario, and more than two-fifths of the value of all the fish taken in that lake. Until the whitefish and salmon trout increase in sufficient numbers, I think the pike should be protected.

Dr. MACCALLUM: If he is killed to the extent of one-third of the total catch, I should think he gets his deserts.

Secretary STEWART: Should any other fish be added to that?

Mr. SKINNER: Regarding the remarks made on the wall-eyed pike, I would point out that in Canada what we know as pickerel is known as pike.

Secretary STEWART: This is a strong resolution, because it says "the taking or having in their possession," so we would be able to reach the dealers.

The CHAIRMAN: The only amendment is that of Mr. Stewart, in which, after the word "States" he adds the words "and Provinces." The secretary will underline that amendment, their being no objection to it.

The resolution was adopted.

Secretary STEWART: The second resolution was by Mr. Hoyt-Post, of the Michigan Fish and Game Commission, and reads as follows:

"Resolved, that it be recommended to the Congress of the United States, the importance of authorizing and directing to be made, through the United States Fish Commission, a full and careful biological survey of the great lakes, with a view of determining the character and plentifulness of the food, and the habits and migration of commercial fish."

Mr. WHITAKER: The United States Commission has been accustomed in the past to cover nearly the same ground that is covered by our state Commission in regard to collecting statistics, and this work is fairly well done now. But to make this a practical resolution I would suggest with reference to the work that can be done, an addition to the resolution. You are aware that in the year preceding the Chicago fire, Mr. James W. Milner made a careful and satisfactory examination of these points, including the number of men employed, the annual catch, the history of the decadence of the fisheries, the question of the number of nets, the number of pounds of fish caught, and all those kindred questions essential to an understanding of the fisheries of the great lakes. Unfortunately much of his material, I think all of it, was sent to Chicago, and during the holocaust there it was destroyed, and never since that time has this data been secured and furnished. Yet you are aware that there is a great deal of valuable information contained in the regular Fish Commission reports of the United States on this subject. We have in our work in Michigan attempted as nearly

as we can to follow out the natural methods not only in the breeding of the whitefish artificially, but in the depositing of the fry in the great lakes. We desire to adhere to the conditions nature imposes on the fish, and I would suggest in that line that this resolution be so amended that the United States Commissioners shall be asked to have sent to these waters of the great lakes, if possible, a government cutter or any other vessel at their disposal, not only to make an examination of the food of the fish, but also that a far more practical question can be settled, that is the fixing, as nearly as may be of the location of the spawning beds of the whitefish. There is where the food for the fry is sure to be, though, in my opinion, it exists everywhere in the great lakes. It is one of the practical questions which it were well for them to settle, and I should ask the amendment of this resolution in that respect.

Secretary STEWART: Will you write it, Mr. Whitaker?

The CHAIRMAN: You can write it, Mr. Whitaker, and we will lay it on the table temporarily until that is done.

Secretary STEWART: Here is the third resolution, also moved by Mr. Post:

"*Resolved*, that the members of this Conference from the Dominion of Canada and the States represented, respectively, be requested to take the text of the Game and Fish code prepared by the New York State Commissioners, and consider the same with reference to the applicability of its provisions to their own purposes, and to indicate thereon what provisions may be acceptable to them, and what changes they may deem advisable to be made to suit their separate wants, so that at the final meeting of the Conference an agreement may be come to in respect to all the provisions upon which legislation is desired."

The CHAIRMAN: I would suggest that you put in "Fish Commissioners" instead of "Commission" on the third line. Gentlemen, you have heard the resolution read, are there any remarks?"

Secretary STEWART: I do not know what Dr. MacCallum will say about this, but I have looked over these newly codified laws very closely and carefully, and I have no hesitation in saying that in my opinion and that of every practical sportsman whom I have consulted, the present codification of the New York laws is magnificent. Almost the only thing in the way of our adoption of the whole thing without any amendment whatever, is that some of our conditions differ slightly, and what would be a good season in New York for certain game would not be a good season in Ontario and *vice versa*, but I am sure our Commissioners will see much in this text to help them and on which to base recommendations of their own. This resolution calls for the taking of the New York Act as the basis of our report, and I think that should be done. Mr. Chairman, you will understand this, you yourself at Rochester made a remark that should not be forgotten: This conference is a meeting of representative men aiming at a certain point tending towards the assimilation of the laws. You, however, wisely said at Rochester that this is a matter which cannot be reached in a day, or reached quickly by one sweeping resolution. All we can do is to agree on a certain broad basis and then merge together for the common good. That is what I want to make clear, and as far as I am concerned I am in extreme sympathy with this Act. It is a magnificent Act, carefully drawn up, and will be very valuable to us. If we have other annual meetings, which I hope we shall, we can adopt suggestions from time to time which will bring us nearer to the goal which we hope to reach.

Dr. MACCALLUM: I can endorse what our Secretary has said in reference to the Bill in question. Its provisions are ample, but there are some to which I cannot

agree, knowing as I do the wiles of the pot-hunter. You are well aware that, speaking of bird life, there is a peculiar instinct connected with that life which induces them to migrate in the spring to the north, returning southward in the fall. We live in Ontario with extensive territory extending to the Hudson Bay on the north and we receive a great portion of the bird life which spends its winters in the south. We not only receive them, but we take care of them during seven or eight months of the year. We furnish them with their breeding homes and we therefore have a claim upon them. We think that they are, to all intents, native-bred Canadians. It is true it would be a good thing if we could prevent that exodus after raising their broods here, but like many of our Canadians they are inclined, many of them to go south, some to stay, some to return again. Our Dominion Government proposed the national policy to stop this human emigration, and it might be as efficacious to prevent the emigration of bird life as human life, personally I have just that faith in it. Well, though we cannot do that, we feel like asking our American cousins to take care of the birds better than they do while they are not with us. We expect them to get a warm reception, and that they will be well peppered while there, but when these birds start for their homes again I think it is a scandalous thing that they should be shot at from every nook and corner on their way to the breeding grounds after they have mated. I, therefore, think of this objection to this codification—that it allows spring shooting. Snipe and other game birds are shot in April, while they are going through their little courting scenes, thus destroying the whole brood. We cannot artificially breed our native birds, but the sooner we take steps to shorten the shooting season, the sooner we will be in a position to preserve these birds. I think that our report will be that the shooting season in the fall should open on the 15th of September, and I notice in the copy sent me of your codification that that date was first written in, and afterwards crossed out and the 1st of September written. I think that was a great mistake. We knew it would restrict our season to some extent in regard to woodcock and other birds, but these birds are become somewhat extinct, and the reason of the change was that anyone going out for these birds would be tempted to shoot other game. We do not want to destroy the little sport that still remains. We want to give our children opportunities of taking vigorous exercise by preserving our game fish and birds. There are no more invigorating or heart-stirring days than those we have spent, when taking the rod and gun, we have gone in search of speckled beauties, or bagged our quail or partridge in the course of a long day's tramp. Hares are allowed to be shot in February. Now, if a man goes out for them and comes on a bevy of quail he blazes away into them, and they are pot-hunted. Ducks are allowed on the other side to be shot up to the 1st of May, but that, I think, is all wrong. If our American friends would memorialize the government to prohibit spring shooting, I think it would meet with the general wishes of the whole country. I would suggest that from the 15th of September to the 15th of December should be adopted. I think that is all I have to suggest just now, and I would like to hear from the other gentlemen what their opinions are on the subject.

Mr. SKINNER: I am sorry that some of the other members of the Codification Committee are not here to speak on the subject. This subject of spring shooting was brought up, and immense pressure was brought to bear on the Commission by interested parties on Long Island, New York State, to leave this spring shooting open. I think it is a very wrong thing, and a great mistake.

Mr. AMSDEN: This matter of spring shooting was desired by the Long Island shooters, though it was against the judgment of the better class of sportsmen and conservative men, who are in favour of doing away with it. I am not surprised to

hear our friend, Dr. MacCallum, speak on that subject, and I think it would be wise to embody something of that kind in the resolution—that we approve of the codification of the bill, except that we deprecate spring shooting of game birds; and I think, also, that the point he makes on the opening of the fall shooting is a good one. I think the original bill did call for September 15th, but pressure was brought to bear. I expect that this bill will be brought up again, and I am in hopes that before Legislature convenes I may be able to bring to the notice of the Sportsmen's Association of New York the necessity of getting these changes carried through. If that meeting is called I mean to try to get our Canadian friends invited to it, and they can there express themselves. I think the better class of people in New York State appreciate the fact that our game birds are disappearing, and are desirous of doing something to protect and preserve them.

Secretary STEWART: When I spoke of approving of this Act I spoke in a general way, but we Canadian sportsmen are united in regard to the necessity of stopping spring shooting. I do think that this spring shooting should be done away with for the reason that Dr. MacCallum has so ably outlined.

Mr. AMSDEN: Have you laws abolishing spring shooting?

Dr. MACCALLUM: Yes. For several years we have not allowed it.

Secretary STEWART: Yet we have to keep our guns unloaded, while you are shooting all the time. It is hard to make laws where the frontier is so close as at Prescott, Ogdensburg, Niagara and Windsor. I think the necessity of stopping spring shooting in the interest of the future should receive attention.

Mr. WHITAKER: I am not a shooter from Shootersville. If I were, I should have to hire somebody to support my family, for I could not devote enough time to fish and shoot too. Mr. Stewart must remember that on the great marshes of the river St. Clair, which lie in both waters, and which are the home of the wild fowl, the law of compensation steps in to the advantage of the Canadian sportsman. For, while the Canadian side is a preserve, the people on the American side spring shoot and fall shoot and hit them whenever they can, and it is the universal comment that Canada has the best of it, because the fusilade has driven the birds over into the marshes on your side.

Dr. MACCALLUM: If the Americans are any sort of shots at all, those birds they shoot at do not get over to our side to breed. I would suggest that this resolution be adopted: "Resolved, that this Convention heartily approves of the New York Codification Bill with the single exception of the allowance of spring shooting. And we in conference assembled wish to ask the New York Commission to reconsider this point and to adopt as the only shooting season, the dates in each year between the 15th day of September and December 15th or 30th.

The CHAIRMAN: Did you offer that as a substitute or as an amendment?

Dr. MACCALLUM: That might be offered as an addenda. It says here we are asked to consider the same, as it is applicable in its provisions to our own purposes, and to indicate what changes may be deemed advisable to suit our several wants, etc. Now, as Chairman of our Ontario Fish and Game Commission, I naturally look to New York State on account of its location, and climate, and advanced civilization, as the most probable place in which to find a set of game laws applicable to this Province, and which would assist us very much, and it was our suggestion that this should be stated. That was the first step towards this conference. We conferred with Mr. Whittaker who thought it would be a good thing. First it was to be a meeting of our Commission and that of New

York State, but it grew until delegates were asked from all the Provinces and States around the great lakes. In view of this object, the more I think of it the more I am impressed with the importance of our agreeing on a uniform set of Fish and Game laws. With reference to this resolution, I do not think there is another point with which I wish to find fault in that code of New York State, but I do not think the clause referred to should be found in a code which evinces so much advanced thought on the subject.

The CHAIRMAN: If you would put that in the form of an exception I think it would be preferable. After the meeting at Rochester in reference to the codification bill, I came to the conclusion that at this meeting, provided Mr. Roosevelt, Mr. Whitaker, and General Sherman were present, I would submit this idea in a discussion of the bill: Last winter when the bill was before the House, many adjournments were had on account of the same objections taken by Dr. MacCallum. Would it not be to the advantage of both Provinces and New York State if the bill as now proposed be modified so that the clauses referring to the preservation and propagation of fish should be separated from those referring to the game. While all parties agreed substantially in regard to the fish, last year I deemed it of paramount importance to that of game. I venture the assertion that the bill was lost in its present form, in consequence of the repeated adjournments which were had by those interested in the game sections.

Mr. WHITAKER: I think you are right. The same thing happened with us.

The CHAIRMAN: My friend from Michigan states that the same thing occurred in his State. In New York our representatives considered the food fish question as paramount in importance, much more than that of birds, but a fight took place over the game clauses, strong delegations came up to Albany of men interested in shooting small birds on Long Island, and blocked the whole thing with discussions on those points. If the two were separate, then we would know what we had to provide for, but if you join the two interests the bill is sure to meet with this discussion, and the whole thing will be lost. I do not care to have this considered except as a suggestion; I thought I would bring it to your attention if Mr. Roosevelt and Mr. Whitaker were present. The objection raised by Dr. MacCallum brought home very strongly to my mind the idea that if I was held responsible for the passing of the bill I would separate the game from the fish sections. The great number of sections referring to fish as compared with the few referring to birds naturally suggests that it would be unfortunate if the bill was lost in New York or in the Provinces in a discussion as to when birds or game should be shot.

Dr. MACCALLUM: It is certain that appointees of the Province of Ontario have not the right to discuss this question, as it is a Dominion issue. We have not authority to do it yet, but I understand that negotiations are in progress by which the Dominion Government will hand over to the different Provinces the control of their inland fisheries. It is on the strength of that we are talking.

Mr. WHITAKER: Is it different in regard to game?

Dr. MACCALLUM: Yes, the Provinces make their own laws in regard to game. Each Province should have control of its fisheries too.

Mr. WILMOTT: So far as the Dominion and Provincial Governments are concerned the two bodies cannot agree with each other. The Provincial Government prevents netting in inland waters, while the Dominion Government grants licenses for it.

Mr. WHITAKER: Does the Dominion Government allow netting at the mouths of streams? It is the most remarkable proposition I ever heard of.

Dr. MACCALLUM : Some boys recently pulled up 300 yards of gill net which was stretched across the mouth of the Grand river, yet the matter was not looked into, though the net really closed up the whole stream.

Mr. AMSDEN : Was that net licensed ?

Dr. MACCALLUM : Yes, but not to be put there. We had before us recently the president of the Long Point Shooting Company, and he assured us that he could show us drawn up on the sands, festering in the sun, not less than two or three tons of black bass eggs which had been drawn up by nets on the beach. Yet these seines were licensed. Just think of that in a civilized country ! Allow me to draw your attention to the fact that this resolution was simply a suggestion that this subject should be brought before this conference for consideration. Therefore, any resolution with reference to that before this meeting would be in order, I think.

The CHAIRMAN : Certainly, please write your resolution.

Dr. MACCALLUM put his resolution in writing, and it was moved by Mr. Whitaker, seconded by Mr. Stewart and carried unanimously.

Mr. WHITAKER : I have now reduced my amendment to this resolution to writing, and I would suggest that these words be added to the resolution :

" Resolved, That the United States Commissioner be required to urge upon Congress the necessity of granting an appropriation to permit the detail of a force of competent and skilled persons, to ascertain and mark in detail upon suitable charts for public use and distribution, the location of the spawning beds of the whitefish, salmon trout and other commercial fish in the great lakes, whereon the fry of these fish artificially propagated may be placed where the fish naturally cast their ova."

I move this resolution seconded by Mr. Smith.

The resolution was adopted.

Secretary STEWART : The next is a resolution by Mr. Post, which reads as follows :

" Resolved, That this body regards with disfavour any movement looking towards the turning over to the United States government the work of the state commissions in propagating and planting commercial fish in the great lakes."

" That the jurisdiction over the lake fisheries belongs naturally to the adjoining states, whose interest in their success is paramount to that of the United States as a whole, and,

" That there is an abundant field for the concurrent action of the bordering states, and of the general government, and anything that would detract from the state's interest in this matter will be detrimental to the end aimed at of restocking the waters of the great lakes."

" And we recommend a course which will encourage and stimulate greater interest and larger expenditures in this great work by the several bordering states, and at the same time, increased interest in the subject by the United States Fish Commission."

Mr. WHITAKER : Mr. Chairman, I would move the adoption of this resolution, and in so doing I would like to state that it was with some embarrassment that our Commission decided to send a representative to your meetings. The embarrassment arose from the fact that the original resolution on which you met seemed to indicate that it was a matter that more nearly concerned the Province of Ontario and the State of New York. We came to the conclusion, however,

after being informed of the results of the New York meeting, that it was a matter in which all States and Provinces bordering on the Great Lakes were interested, and that will stand as an excuse for our representation here to-day.

It has been justly said, that "He is a benefactor of his race who makes two blades of grass to grow where only one grew before," and how doubly true must this be of him that makes thousands of fish to grow where but one grew before! The restocking of these vast inland seas of ours is a matter of no small concern to those who live upon their borders. Their magnitude can be better comprehended, perhaps, by considering that if we should take and put the lakes of Ontario, Erie, St. Clair, Michigan, Huron and Superior end to end we should have an immense inland sea more than fifteen hundred miles in length, and with a varying width of from seventy-five to two hundred and fifty miles. Looking at the matter from this standpoint you can better understand the extent of these great lakes. One of our fleet lake steamers, sailing at the rate of from twelve to sixteen miles an hour, would occupy from thirty-six to forty hours in circumnavigating the lower peninsula of Michigan alone, and the same vessel leaving the port of Buffalo would consume from four to four and a half days in making the trip to Duluth, about one-half of the time that is occupied in crossing the Atlantic.

Of the fact that these waters at one time teemed with all the varieties of our valuable fresh water fishes there is abundant proof. Reference is frequently made in the accounts given of these waters by the early French voyageurs of the plentifulness of the fish that abounded in these lakes. La Hontan says that he found Indians at the Straits of Macinac fishing with nets made from the bark of trees, and that they easily succeeded in obtaining all the fish they desired by this means. He further says that "the supply is so abundant that it must furnish an important supply of food to the people who shall hereafter settle upon the borders of these lakes." Another voyageur, passing from the waters of the Detroit river into the upper end of Lake Erie in company of a military escort, says "the sturgeon upon their spawning beds are so thick that the soldiers killed them with their swords." What was said by La Hontan respecting these fish as an important element of food to the subsequent dwellers upon the lake borders was unquestionably true, but neither La Hontan nor any other man of his time could anticipate that this country would be so densely settled as it now is. The demand for these fish has not been confined to the people who live upon their immediate borders. But even granting it were so, it is easy to imagine what a great demand would have been made upon these waters by the people within those limits when we take into consideration that the returns of the eleventh census show that one-sixth of the population of the United States is centered in the five great States bordering the great lakes, Minnesota, Wisconsin, Illinois, Indiana and Michigan. But this is not the only demand that is made upon these waters. No hotel or restaurant east of the Rocky Mountains would consider its bill of fare complete if it did not include whitefish or trout. So great has the demand become, that there is no lake port of any importance which has not from one to a half dozen freezers in which are stored these valuable fish, which are thus held throughout the year to be sold as fresh fish in all the markets of the important towns of the Western, Southern and Eastern States.

The fishing industry, which was once prosecuted with the aid of sail boats, which fished only for a portion of the season, has grown to such importance that for the last ten or fifteen years—because of the refrigerators furnishing a market for fresh fish during the entire year—it has been prosecuted with steam tugs and vessels until the demand has grown to be enormous. Add to this the

inventive genius of man, which has so improved the fishing apparatus that it has now reached the height of proficiency, and then consider that in addition to this, ever since the discovery of the country the fishing has been carried on without restriction, and you can then understand that now we are confronted with the great waste of nearly two hundred years, and with the problem of what we shall do to restore this loss.

Fortunately the investigation of man has found a means by which fish can be artificially propagated and the waste made good. There is no question in my mind that if a reasonable restriction could be laid upon fishermen, which should only permit fish that have come to a spawning age to be marketed, a great step would be accomplished.

Let me call your attention to what has been going on in one single section of the country, and let me refer to the waters of Michigan with which I am most familiar. I refer to it for two purposes, one is to show the value of the commercial fisheries to the State of Michigan, and the other is to show the task that is set to the State to restore the waste that is constantly taking place. In 1885 the Michigan Fish Commission sent into the field a statistical agent to gather information as to the importance of these fisheries, of the amount of money invested in the industry, the number of men employed, and for such other data as might be of value. His report shows that there were caught and marketed 8,143,626 lb. of whitefish, 5,313,538 lb. of salmon, 4,855,045 lb. of herring, 886,899 lb. of pike perch, 617,449 lb. of sturgeon, 35,318 lb. of bass, and 4,886,668 lb. of all other kinds, and that the value of the catch was more than one and a quarter millions of dollars per year. It is needless for me to ask you, gentlemen, if such an industry as this is worth the effort on the part of the State to maintain it. And let me ask you whether the State of Michigan or the State of New York or the Province of Ontario or any other State or Province would not be neglectful of its interests if it should permit such a valuable industry to fall into decadence, and would it not be justified in devoting to its perpetuation a reasonable sum of money each year.

Our Commission started in the State of Michigan with but a feeble existence, but with persistent effort we have to-day broadened its efficiency until we are doing something like the adequate work that the lakes demand. We have set before us the task of restoring the loss that has resulted from over a hundred years of unlicensed fishing, and with the aid of bordering States we believe that we shall succeed in at least arresting the waste, and that we shall eventually be able to restore the waters to something like their original condition.

We have, in Michigan, been through all the throes that lead up to the passage of laws protecting the waters against improper fishing, and to-day we have reasonably good laws that have been passed regulating the meshes of gill and pound nets. Under the law as it was originally passed, and to guard against the claim that we might prejudice the investment that fishermen had in their nets, two years were given them in which to fish out the nets that were then in use, as it was generally agreed that that is about the average life of a net. But the passage of laws is one thing, and their enforcement is another. If the fishermen would consent to give up the selfish view, that they must take everything that comes to their nets, and would consent to reasonable regulations, our work would be very much aided and their prospects would be much improved. The selfishness and greed of fishermen, however, is such that they have been detected in evading the law, where the meshes of the net were regulated by a statute which provided that they should be of a certain size, by dropping into the back of the pound when the net was lifted an apron which prevented the escape of every-

thing and which allowed them to claim that they were fishing with a net of the regulation size. The result of all this legislation has been that we have come to believe that the point toward which we must devote our energies for the present, must not be the question of securing laws affecting regulation, no matter how perfect they may be, but that we must seek first of all for a rigid enforcement of the laws which we have.

Five or six years ago our Commission prepared a well digested bill which provided for the appointment of a fish warden whose compensation should be an amount fixed by the Bill to be paid out of the treasury of the State. It further provided for the appointment by the board of six or eight deputies, who should be paid a stated salary from the State treasury, and whose jurisdiction should be co-extensive with State lines, and who might be sent into any part of the State to perform their functions. Such appointment permitted, in case of complaint, the sending of a deputy into the neighbourhood where a complaint was made who was a stranger to the community, and over whom no one would have influence in connection with the discharge of his duties. The Bill came before the House and after due consideration was passed by a large majority and was then sent to the Senate. In the meantime, the sportsmen who were interested in game came to us and asked us to incorporate a game protection clause in the Bill. This we refused to do on the ground that the State was not engaged in the propagation of birds or game, and that such additional duties as we should be required to perform with that addition would be imposing more upon an unpaid board than we cared to assume. As a result of this decision our bill was killed, and in its stead a most pernicious bill was passed which provided for the appointment of one or more wardens in each county in the State, whose compensation was to be fixed by the boards of supervisors. This bill received the signature of the governor and became a law. The result has proved what we anticipated. The boards of supervisors having in almost every instance refused to fix any adequate compensation, and the result is that, with the exception of one or two localities in the state, there is no enforcement of the laws. So strong has become the opposition to the warden law as it stands to-day that the governor in his last message recommended to the legislature that a bill be introduced abolishing the warden and his deputies.

We are somewhat hopeful that we may yet have an efficient enforcement of such laws as we have, by the adoption of a better plan, and to secure this we shall undoubtedly encourage the formation of sportsmen's associations in the different localities of the state among those people who feel a keen interest in the question, and thereby secure the needed legislation.

The only efficient protection we have in Michigan to-day is the protection that is enforced by such bodies of men as these that now exist in several localities in the State. As it stands now it is everybody's business and therefore nobody's business, and the laws are practically unenforced, except in occasional instances. I have never yet known of a complaint being made against persons who are engaged in net fishing in the great lakes. Such cases as have been brought for violations of the law have been almost universally those that have occurred in the inland waters.

We propose to correspond with men in every part of the State who are known to be interested in the enforcement of the laws, asking them to organize sportsmen's associations, and to select and send delegates to a State convention which shall meet at some central point in the State to consider the various questions in which we are all interested and in this way we shall secure a force of

proselytes, we hope, from every county in the State, thus bringing an influence to bear upon members of the legislature. Public sentiment is the natural power by which we must move in effecting a revolution of this kind.

While the people of our state generally sympathize with the efforts of the Commission in the conduct of its work, and give us much encouragement, there are, in our state as well as in every community, some individuals who think that the state ought not to contribute to this work because, as they insist, no one but the person immediately interested in the fishing industry reaps a benefit. It is gratifying to know that but few men look at the question in this narrow way. With such men as these we use the argument that any industry which brings into the state a large amount of money each year contributes to the general prosperity, as the money so realized is disseminated through the ordinary channels of trade, and redounds to the advantage of everybody; we might as well say that the State of Michigan had no business to have originally invested more than eight hundred thousand acres of the public domain in the construction of the ship canal at Sault Ste. Marie. That it would be equally true to say of this enterprise that the people of the state are not interested in it, when reflection would show that the vast mining industries of the upper peninsula of Michigan, which owe their great value to this improvement, could only have been made productive by this outlay, and that no one would have the hardihood to gainsay the fact that the money which continually flows into Michigan in exchange for this mineral wealth, does not benefit the people at large.

And now let me say a word with regard to the great Lake of Ontario, which lies at the door of New York and the Province of Ontario, and in which you should have a keen and lasting interest. It is a matter of regret that New York and the Province of Ontario should have been so derelict in their duty as to permit this great lake with its whitefish industry, to have fallen into absolute decay without raising a hand to arrest it. There was a time, within my own personal remembrance, when these waters were so productive that in the fall of the year the product of the fisheries along the New York line were distributed for miles inland from its shores to the farming community of Northern New York. But that time has long passed, and the nets of the fishermen have been withdrawn from these waters and the industry has been deserted as one which is no longer profitable. You have here at your doors a great lake which nature has provided with an ample store of natural food of commercial fishes, and all that it lacks is an adequate restocking at the hands of the State. There never was a water better fitted to be stocked by those who are interested in artificial propagation than Lake Ontario. You have it in your power here to demonstrate beyond question, the advantages of artificial propagation and restocking. The conditions of this lake are such that with the practical abandonment of the fishing industry you are now at liberty to secure, without opposition from fishermen, proper and just restrictive laws with which to protect the fish if you should restock the lake. The amount of outlay necessary to establish proper stations upon this lake for the hatching and distribution of fry, would be but a mere bagatelle to such wealthy States and Provinces as lie upon its borders. The results of such a restocking, if intelligently conducted, will in the years to come make the fisheries of this lake a source of great revenue to the State.

While I do not decry the attempt on the part of the general government to contribute its share of work to this end—on the contrary, I welcome it—yet I say that the efforts of all interested, cannot be too thoroughly devoted to this object. I speak of the State and the Province engaging in this work for the simple reason that they are more directly interested in this matter than anyone else can be, and

so it should be the special business of the State and Province to see that this work is carried on. If you can secure help from any other quarter you should accept it, and accept it willingly; but I believe it will require the united efforts of all to bring it back speedily. There is no reason why the State of New York, with two hatcheries established upon the borders of Ontario, the Province of Ontario with as many, and the general government giving you all the assistance it can, you should not be able to put into this lake five hundred millions of fry each year. Urge this matter upon your legislature and upon your parliament, and then secure all the assistance you are able to from wherever it may come. A hatching station capable of producing from sixty to eighty millions of fry will not cost the State more than six to eight thousand dollars, and the expense of maintenance would not exceed that for each year, and if this appropriation could be obtained it would be money well invested.

I hope that every single State bordering upon the great lakes will take up this matter with renewed interest, and will devote a suitable sum as its share to the general contribution; and I hope that congress in its liberality will devote as large an appropriation as it may deem desirable to aid us in this work. It is the waste of a hundred years or more that we must overcome, and with these possibilities before us it is our duty to make these great waters as prolific a source of food supply as the lands which surround them. I sincerely trust that I shall live to see the day when every spawning fish taken from the waters of the great lakes shall have her eggs fertilized, artificially hatched, and placed in the waters again. I move the adoption of the resolution.

The resolution was adopted.

Secretary STEWART: I have here another resolution that reads as follows:

"Resolved, Further, that this body earnestly approves of the action of Congress in making an appropriation for the establishment of a hatching station on or near the St. Lawrence river, for the propagation of whitefish and other commercial fish: and of the purpose of the United States Fish Commissioner to carry out the provisions of that appropriation; and we see nothing in this movement that can in any degree interfere with the jurisdiction of the States in the premises, or affect in any way unfavourably the work of the States in the protection, multiplication and distribution of valuable food fishes."

The adoption of the resolution was moved by Mr. Amsden, seconded by Mr. Whitaker, and carried.

Secretary STEWART: The next resolution is as follows:

"Resolved, That if a practical agreement can be had in regard to the provisions of laws for the regulation of the fisheries of the international waters, it is nevertheless not practicable by reason of the differences in territorial extent and mode of legislative procedure, to settle upon precise statutory provisions in relation thereto, which shall apply to all; and therefore it is recommended that each Dominion, Province, and State representation make such recommendation touching its particular jurisdiction as shall apply to the case; leaving it to each representative to frame the matter into law according to the forms and circumstances, for the action of the proper legislative body."

The adoption of the resolution was moved by Mr. Stewart, seconded by Dr. MacCallum, and carried.

Secretary STEWART: The last resolution on my list was moved by Mr. Ford, and reads as follows:

"Resolved, That we recommend to the fish commissioners of Canada the adoption of the following resolution for the St. Lawrence river, viz: That we ask

of the Canadian Fish Commissioners a prohibitory law that will prohibit the use of all kinds of nets in the Canadian waters of the St. Lawrence river the same as the New York State Confiscation Bill now recommends; we also ask of them to include the same time for their close season on the St. Lawrence river for all kinds of game fish that the above named codification bill recommends."

The adoption of the resolution was moved by Mr. Amsden, seconded by Mr. Skinner.

Secretary STEWART: We have at present little control over our waters, consequently all we can do is to send the recommendation to the Dominion government.

Mr. AMSDEN: Later on when you do get the power you can act on it.

The resolution was adopted.

Mr. SKINNER: I would like to read you a few statistics in reference to the association of which I am a member. It was organized in 1883:

THE MATERIAL BENEFITS OF FISH PROTECTION.

The sole aim of the organizers of the Anglers' Association of the St. Lawrence river in 1883 was the preservation, protection and perpetuation of game fish in the St. Lawrence River. Probably no one of the persons active in the organization had any other idea in view; but they builded better than they knew.

At the same time, matters on the St. Lawrence River were at a stand-still; there were very few persons going there for the sake of the fishing, for the simple reason that, owing to the activity of the netters, it had been almost destroyed. But a small number of the islands had cottages built upon them. There were a few people who passed down the river on tourists' tickets from Niagara Falls to Montreal, but there were no inducements for them to stop over on the way. Some of the anglers who had resorted to the river for many years for fishing, still continued their yearly visits. The organization of the Anglers' Association created a sort of excitement in reference to the possibilities to be accomplished by it, so that its members lived for two or three years upon faith, believing that the efforts of the association in ridding the river of netters would very soon have its effect in much better fishing. Its members continued to visit the river year after year and to induce their friends to do the same. The results of the exertions of the Anglers' Association are now known to every one who is interested, and its efforts in ridding the river of fish netters have been attended with so great success that it is now possible, and has been for the last three years, for any angler to obtain all the game fish he desires. The object of the organization of the association has thus been effected, in part by increasing the supply of game fish in the river, and in part by ridding the river of the fish pirates. Its efforts in preventing net fishing will not be at all slackened, but will, on the contrary, be increased.

The material benefits which have come from the efforts of the Anglers' Association of the St. Lawrence River have been entirely unexpected, but they are, however, no less welcome. As an object lesson which should be carefully read, marked, and inwardly digested, the following facts are given, showing the material benefits which have come to Jefferson county from the organization of the Anglers' Association of the St. Lawrence river:

Jefferson county, lying along the St. Lawrence river from Cape Vincent to a point fifteen miles below Alexandria Bay, covering a distance of over

forty miles, embracing the celebrated Thousand Islands, is naturally one of the most attractive regions in the country for the tourist and sportsman. Its exquisite river scenery, its banks and islands and its delightful air, leave nothing to be desired — if the fishing is good.

There were in 1889 about six hundred persons employed as oarsmen on the river; in 1883 there were perhaps a hundred. In 1886 there were about two hundred and fifty employed in connection with steam and other boats; in 1883 there may have been thirty. There were last summer thirty-six hotels capable of accommodating four thousand people. Six years ago the hotels could accommodate scarcely a thousand people. Besides these there are now thirty boarding-houses, with a capacity of five hundred guests; there are between six hundred and seven hundred cottages used exclusively by summer residents. From one million to one million two hundred and fifty thousand dollars was spent on the river last summer by tourists, exclusive of railroad fares. A large and increasing business has also grown up in building steam yachts and the celebrated St Lawrence skiffs.

Here, then, is a veritable gold mine lying at the feet of Jefferson County, by which every resident of the county is benefited either by a reduction in his taxes, by being given employment, or in his business. The population of Jefferson County is 66,000, every one of whom is constantly being benefited by the Anglers' Association. That is one side of the question, the other is this: There were during the netting season of 1888 about sixty or seventy persons engaged in illegal net fishing within the limits of the county, and of this number more than one-half were non-residents. When it is borne in mind that these net fishers do not make nearly as much if allowed to carry on their netting as ordinary farm workers, it will at once be apparent that Jefferson County could, as a business speculation, afford to hire and pay them a fair salary to remain perfectly idle, and to pension them in their old age.

The total tax assessed against the town of Alexandria (the central point on the river) was \$10,906.97, of which \$2,351.28 was paid by summer property holders. In other words, nearly 22 per cent. of the taxes of the town of Alexandria was paid by summer property owners. The assessed value of summer hotels and island property in the town of Alexandria in 1888 was \$256,000, the basis of assessment being one-third of the actual value, while the total amount assessed was \$1,218,029.

The organization of fish protection associations accomplishes three distinct things: it protects the fish, furnishes the people with cheap fish food, and last, but not least, is of enormous material benefit to the surrounding country.

In regard to non-jurisdiction I may say that one of the first difficulties we encountered, was when the question was raised in regard to the jurisdiction of the State on the international waters of the St. Lawrence. We engaged counsel to look up this question, who made an exhaustive search of the laws in regard to it. He told us the law on the question was based on the old English law, and the question was decided to this effect: That the State had jurisdiction over international waters, just as much as she had property or islands on which she could collect taxes.

MR. WHITAKER: To the boundary line?

MR. SKINNER: Yes, to the boundary line. You Canadians, I suppose, have the same law, and I do not see why you have not jurisdiction over the inland waters, just the same as other waters.

Secretary STEWART: That is what the courts are going to decide. Well, gentlemen, these are all the printed resolutions, but there is one thing that seems to us in Canada to be passing strange, and that is, why in American waters no close season is in existence for whitefish. It seems to us that when we take pains to spare the whitefish, we do some good, but I understand that in your country, you have no close season!

Mr. WHITAKER: We have considered this question in all its points and have not failed to consider all the benefits of a close season, but there is an economical question beyond all that, which has held us in check: Whether it would be better to lay the restriction on the meshes of the nets or upon the size of marketable fish found in the possession of dealers is a question. It has resolved itself into our procuring the passage of an act regarding the meshes of gill nets and the backs of pound nets. We met with violent opposition, as all do who attempt such legislation. One fisherman will say that gill netting is all right, and that it is the pound net fellow who does all the damage. The pound net fellow will say that it is God's providence that pound nets are permitted to be fished, and that it is the gill net fellow who is killing all the fish. It is a difficult question as to where you will draw the line. However, until we can get enforcement of the law, it is nonsensical to pass laws, because you beget a disregard of all laws and create the idea that they can be evaded. Another matter about the close season is that we have 2,000 miles of coast, covering three or four degrees of latitude. You can readily understand that fish will run at different times in different localities. In some localities they fish for nothing but herring, while in others, a different class of fish is sought for, and it is at such meetings as this, that practical fishermen should be called together to discuss these questions with us. I may tell you that at one time we did call them in to discuss these subjects, and it was a monkey and a parrot time. You could not get any two of them to agree on anything.

Secretary STEWART: We had the same difficulty when the matter was referred to.

Mr. WHITAKER: You see it is most repugnant to people on our side to attempt to say by statute that a man cannot go just where he likes and do what he pleases in shooting or catching fish. They have often threatened to cut off our appropriation; they cannot do it, but that is their spirit. A gentleman representing one of our districts resides near a shooting ground at the mouth of the Detroit River. His son had gone on to these preserved grounds poaching, and they got after him and punished him. The old man got into the legislature to get even, and when we presented our application for an appropriation to the legislature, it dragged most unaccountably. I found that this old gentleman was on the Committee of Ways and Means, which passed upon appropriations, and he said to me: "You cannot get your bill through before I get this bill of mine." His bill permitted people to fish or hunt anywhere irrespective of private rights! He had the influence, and his bill was carried after striking out shooting and letting fishing stand. But of course it would not stand the tests of the courts two minutes, as it was unconstitutional.

Secretary STEWART: That is all the business I have in the way of offered resolutions, but there are one or two I would like to offer before we disperse.

Dr. SMITH: I may say that we think the hatchery will be located on the St. Lawrence River near Clayton. As soon as it is determined on, everything will be done to get the building up and fitted in order to do good work. The Commissioner told me that when he got it in good working order he expected to

count his fry by hundreds of millions. He expects to hatch whitefish, salmon trout, and wall-eyed pike, and may incidentally try to establish a run of salt water salmon such as formerly existed.

Mr. WHITAKER: And which is now being successfully accomplished on the Penobscot River.

The CHAIRMAN: Is the appropriation now sufficient to complete the building?

Mr. SMITH: No, it is only sufficient to get the site. But the money for the building will probably be got within a month or so.

Mr. WHITAKER: May I add one word to what I have said. The fisheries upon the Detroit twenty years ago were wonderfully profitable. A man who was engaged in fishing at Belle Isle in 1870 says he caught \$75,000 worth of whitefish. But the sewage from the City of Detroit has killed off the fish to a great extent. At Fort Wayne there is a fishery known as Craig's Fishery where they get about 2,000 whitefish annually, and that is not twenty-five rods from where there is the mouth of a double sewer coming out. Either the instinct of the fish is so strong that they will come there until they are extinguished, or they are not affected by the sewerage, owing to the way in which the sewerage gets disseminated. There is a marked difference between this fishery and those on the Canadian side, which exceed our catch by 2,000 or 3,000 fish.

Mr. AMSDEN: What is your experience with fish returned to the water?

Mr. WHITAKER: We have none, because we have not done so. We put them into a grating with the water constantly flowing through.

Mr. AMSDEN: After they are stripped do you think they live?

Mr. WHITAKER: Yes, we keep them there in the grates ready for the market for five or six weeks. We have two or three semi-interior lakes in our state where fish run in for spawning purposes. We have been planting one or two of these lakes very heavily to draw our ova from there. We think that is an inexhaustible source of supply.

Mr. SKINNER: Regarding the establishment of the hatchery, I might add, that last Monday morning, I had the pleasure of accompanying the United States Fish Commission's engineer to some springs in the vicinity of Clayton, and last Saturday morning he was on hand again with his instruments and proceeded to these springs early in the morning. Mr. Grant promised me to forward a report of the examination of the springs, for the reason that it was said that Commissioner McDonald was to be present here to-day, and he desired me to explain to him what they had succeeded in finding. I may say that Colonel Gore expressed himself very well pleased with the supply of water and the lay of the land in that vicinity. It is distant about two miles from the river's shore. I may add also, in connection with the matter, that adjacent to the river's shore, is the same locality where the State Commission for the past two years have authorized the use of nets for the taking of whitefish spawn.

Mr. AMSDEN: In regard to what Dr. Smith has said in regard to the progress being made by the United States in establishing a hatchery, I am anxious to see it brought about as soon as possible and without any delay. And I think we should bring our influence to bear on the authorities at Washington to get all the funds necessary, and for that purpose I offer this resolution, which is seconded by Mr. Whitaker:

"Resolved, That the representatives from the states represented at this meeting respectfully recommend and urge upon the representatives in congress

of those States, the necessity of an additional appropriation to be made early in the present session of Congress, to enable the United States Fish Commissioner to construct immediately, proper buildings with necessary appurtenance and equipment for propagating and hatching fish to stock Lake Ontario and the St. Lawrence river, with the whitefish, salmon trout and other fish of the best varieties of food fish."

The CHAIRMAN: The remarks of Mr. Whitaker suggests to my mind the verses by the poet, Whittier. You have read of the dark day in Wyndham many years ago, when people thought the end of the world had come, the fowls and birds went to roost in the middle of the day, and everybody believed a very serious event was to happen. The law-making power of Connecticut was in session, and Abraham Davenport, of Stamford, was among them. When the darkness was most appalling, and the storm was at its height, a timid man moved that they adjourn. That did not suit Abraham, for he was not that sort of a man. So the Poet Whittier says that Abraham opposed the motion, being not at all afraid, and said:

"Let God do his work, we will see to ours.
Bring in the candles. And they brought them in.
Then by the flaring lights the Speaker read,
Albeit with husky voice and shaking hands
An act to amend, an act to regulate
The shad and alewine fisheries. Whereupon
Wisely and well spake Abraham Davenport,
Straight to the question, with no figures of speech,
A Witness to the ages as they pass,
That simple duty has no place for fear."

I commend that to the Legislature of Michigan.

Mr. SKINNER: The thought has occurred to me: Do you in Ontario consider you have jurisdiction in the Bay of Quinte?

Dr. MACCALLUM: I do not think so. It is a navigable water administered by the Dominion.

Secretary STEWART: While Mr. Whitaker is writing a resolution and as the time is getting late, I would say just two things. In the first place, I regret somewhat that your visit here to-day has been made at a time of the year which is somewhat inclement, and forbids us showing you our very pretty little town, but instead of entertainment of that sort we have done ourselves the honour to ask you to dine with us to-night and we hope as many of you as can stay with us will do so. I regret that Mr. Chairman, and Mr. Amsden will be unable to stay.

Mr. AMSDEN: No, I will stay with you.

Secretary STEWART: Oh! I am glad to hear it, but my regret remains poignant with reference to the chairman. I hoped that he would have been with us to-night, to speak with the same force that he has this afternoon. These facts sown broadcast throughout the country cannot fail to be a great help to the cause for which we are working. I was going to say also, before we separate, that I am very strongly of opinion now we have begun these conferences that we should have an annual conference if possible. I believe it would do a great deal of good next year, for instance, to compare notes. It brings the two countries into friendly relations with one another. We get points of great value from older Commissions, and I think altogether it is a most desirable thing. I would be glad if somebody would move that this Conference meet again at some convenient place, to be fixed, next year.

Mr. WHITAKER: I agree with my friend most heartily, nothing but good can come from these meetings of men interested in the same thing. By next year New York will have had a change in its legislature, we will have the benefit of experience, and I think it would be very proper that the time of our Convention be fixed not later than October. I would move that when this Conference adjourns, it adjourn to meet on the first Tuesday in October, 1892, in the city of Detroit.

The motion was seconded by Dr. MacCallum.

Mr. SKINNER: I would suggest that we endeavour to secure incorporation with our Canadian friends, and I would suggest that if the Convention was held at some important point in Ontario it would have a salutary effect.

Mr. AMSDEN: I think Detroit or Cleveland would be central points. I would vote to have it in Detroit.

The resolution was adopted.

Mr. AMSDEN: The line of action of the Association we belong to, in connection with fish culture work, is only becoming known to people in the ordinary walks of life, and they are just waking up to the importance of this question, which gentlemen like Mr. Whitaker have been interested in for years. We, in New York State, feel that the matter is not being cared for as it ought to be, and we have moved so as to excite public notice and attract attention, and in this way have brought about more of a sentiment in favour of action. We have done it by circulating generally to our papers throughout the State, and among the members of the Assembly and senators, literature in connection with the work, and in this way we have accomplished a great deal. What I wanted to enquire was: We are publishing the proceedings of the meeting at Rochester, with the remarks and resolutions. Now, that matter is still in type, and it was my purpose to take the matter we have here to-day and add it to that, and print a large number of them for circulation and distribution in this mission work.

It was decided to have this done.

Secretary STEWART: I think that the thanks of this meeting are due to Mr. Amsden for the great courtesy he has shown to the members, and the large amount of work he has done. He has been most painstaking and has contributed not a little to the success of this conference.

Dr. SMITH: I would second that motion.

The motion was adopted.

A vote of thanks to Dr. Smith, of Washington, was also passed on motion of Secretary Stewart, seconded by Dr. MacCallum.

On motion of Mr. Amsden, seconded by Mr. Whitaker, the following resolution was passed:

Whereas, "Owing to the keen and active interest shown in the re-stocking of Lake Ontario with the valuable commercial fish, with which it once teemed, by many prominent citizens of the State of New York, therefore be it

Resolved, That we urge upon the legislature of the State of New York that an appropriate sum of money be appropriated at its coming session for the installation and maintenance of a hatchery which shall furnish an adequate quantity of fry of the commercial fish."

It was then moved by Mr. Amsden, seconded by Mr. Whittaker

Resolved, That the conference shall now adjourn to meet on the first Tuesday in October 1892, in the City of Detroit.

A vote of thanks to the Chairman, Senator McNaughton, was moved by Secretary Stewart, seconded by Mr. Amsden, and carried, after which the meeting adjourned.

TABLE OF RESOLUTIONS

ADOPTED AT THE

INTERNATIONAL GAME AND FISH CONFERENCE

BEFORE REFERRED TO.

1. "Resolved, That provisions ought to be introduced into the laws of all the States and Provinces represented in this Conference, forbidding the taking and having in possession of salmon trout and whitefish of the weight of less than two pounds each, and bass of the weight of less than one pound, and blue pike of less weight than three-quarters of a pound."

2. "Resolved, That it be recommended to the Congress of the United States the importance of authorizing and directing to be made, through the United States Fish Commission, a full and careful biological survey of the Great Lakes with a view of determining the character and plentifulness of the food, and the habits and migration of commercial fish."

3. "Resolved, That the United States Commissioner be required to urge upon congress the necessity of granting an appropriation to permit the detail of a force of competent and skilled persons, to ascertain and mark in detail upon suitable charts for public use and distribution, the location of the spawning beds of the whitefish, salmon trout and other commercial fish in the Great Lakes, whereon the fry of these fish artificially propagated may be placed where the fish naturally cast their ova."

4. "Resolved, That the members of this Conference from the Dominion of Canada and the States represented respectively, be requested to take the text of the Game and Fish code prepared by the New York State Commissioners, and consider the same with reference to the applicability of its provisions to their own purposes, and to indicate thereon what provisions may be acceptable to them, and what changes they may deem advisable to be made to suit their separate wants, so that at the final meeting of the Conference an agreement may be come to in respect to all the provisions upon which legislation is desired."

5. "Resolved, That this Convention heartily approves of the New York Codification Bill with the single exception of the allowance of spring shooting. And we in conference assembled wish to ask the New York Commission to reconsider this point and to adopt as the only shooting season, the dates in each year between the 15th day of September and December 15th or 30th."

6. "Resolved, That this body regards with disfavour any movement looking towards the turning over to the United States Government the work of the State Commissions in propagating and planting commercial fish in the Great Lakes.

"That the jurisdiction over the lake fisheries belongs naturally to the adjoining States, whose interest in their success is paramount to that of the United States as a whole, and

"That there is an abundant field for the concurrent action of the border-

ing States and of the general government, and anything which would detract from the State's interest in this matter will be detrimental to the end aimed at of restocking the waters of the Great Lakes.

"And we recommend a course which will encourage and stimulate greater interest and larger expenditures in this great work by the several bordering States, and at the same time increased interest in the subject by the United States Fish Commission."

7. "Resolved, Further, that this body earnestly approves of the action of congress in making an appropriation for the establishment of a hatching station on or near the St. Lawrence River for the propagation of whitefish and other commercial fish; and of the purpose of the United States Fish Commissioner to carry out the provisions of that appropriation; and we see nothing in this movement that can in any degree interfere with the jurisdiction of the States in the premises, or to affect in any way unfavourably the work of the States in the protection, multiplication and distribution of valuable food fishes."

8. "Resolved, That if a practical agreement can be had in regard to the provisions of laws for the regulation of the fisheries of the international waters, it is nevertheless not practicable by reason of the differences in territorial extent and mode of legislative procedure, to settle upon precise statutory provisions in relation thereto which shall apply to all; and therefore it is recommended that each Dominion, Province and State representation make such recommendation touching its particular jurisdiction as shall apply to the case; leaving it to each representative to frame the matter into law according to the forms and circumstances for the action of the proper legislative body."

9. "Resolved, That we recommend to the Fish Commissioners of Canada the adoption of the following resolution for the St. Lawrence River, viz.: That we ask of the Canadian Fish Commissioners a prohibitory law that will prohibit the use of all kinds of nets in the Canadian waters of the St. Lawrence River the same as the New York State Codification Bill now recommends; we also ask of them to include the same time for their close season on the St. Lawrence River for all kinds of game fish that the above named Codification Bill recommends."

10. "Resolved, That the representatives from the States represented at this meeting respectfully recommend and urge upon the representatives in Congress of those states the necessity of an additional appropriation to be made early in the present session of Congress, to enable the United States Fish Commissioner to construct immediately proper buildings with necessary appurtenance and equipment for propagating and hatching fish to stock Lake Ontario and the St. Lawrence River with the whitefish, salmon trout and other fish of the best varieties of food fish."

11. "Whereas, Owing to the keen and active interest shown in the restocking of Lake Ontario with the valuable commercial fish with which it once teemed by many prominent citizens of the State of New York, therefore be it

"Resolved, That we urge upon the Legislature of the State of New York that an appropriate sum of money be appropriated at its coming session for the installation and maintenance of a hatchery which shall furnish an adequate quantity of fry of the commercial fish."

12. "Resolved, That this Conference shall now adjourn to meet on the first Tuesday in October, 1892, in the city of Detroit."

ONTARIO GAME AND FISH COMMISSION.

MEMORANDUM ON PROTECTIVE LAWS, ETC.

The following will be found a convenient compendium of information as to the Game and Fish protection laws and services of this Province, the other Provinces of Canada, and the neighbouring States of the Union. In the following statement, for brevity's sake, the legal phraseology of the various statutes is abandoned, and the information set forth summarily in the vernacular. The plan on which this statement has been prepared is a simple one. In dealing with each subject, the practice of Ontario in that matter is first set forth, and then, under the same head, are mentioned any notable points wherein the practice of other Provinces or States differs from or is more comprehensive than that of Ontario.

It may be expedient to remark upon a presumption common to all the Game and Fish Protection Acts of the neighbouring States, viz., the presumption (sometimes stated in so many words) that all wild beasts, birds, and fishes, are common property while at large, and private property only when killed and reduced to possession by individuals. Hence the common basis of all State Game and Fish Acts is that the public interest will be served by laws protecting the selected wild creatures in their natural multiplication, or increasing that multiplication artificially. There is no appearance of an opinion in any of these Acts, that sportsmen, anglers, or fishermen, have interests apart from the public, and even the laws that, in some commonwealths, give landed proprietors exclusive property in Game or Fish bred or found on their domains, go on the presumption that such provisions serve the common interest in Game and Fish multiplication. The notion that the *ferae naturae* on private lands can pertain to these lands without a special concession from the people, appears foreign to American and Canadian legislation.

It may be desirable for the Commission to lose no opportunity to explain and publish that Game or Fish protection laws and services are not designed for the peculiar gratification of sportsmen, anglers, nor any special class, but for the purpose of making more valuable the common property of all classes in Game and Fish. The purposes of the Commission are likely to be misunderstood, and the usefulness of its labours impaired, if farmers, pioneers, lumbermen, or any other class obtain or retain a belief that persons who shoot or fish for amusement or recreation are particularly objects of the Commission's care. The economic purpose of the Commission may be described as that of recommending means by which the edible or otherwise valuable wild creatures of the Province may be so preserved or multiplied as to be easily and cheaply obtained by all.

The scheme of almost any set of Game and Fish Protection Acts may be generally and shortly described as embracing :

1. The selection and specification of certain wild creatures considered valuable either because they afford good food or good clothing, or both, to human beings.
2. The protection of the selected creatures by enactments which
 - (a) Forbid molestation of them during stated seasons, days, or hours ; or
 - (b) Forbid pursuit or capture or killing of them by methods or engines peculiarly likely to hinder their multiplication ; or

(c) Forbid injurious interference with their breeding places, nests, habitations, or habitat; or

(d) Limit the number of any species that may be taken by one person in a specified time; or

(e) Encourage the destruction of predaceous wild enemies of the creatures selected for protection; or

(f) Encourage the propagation of creatures on which the protected creatures prey; or

(g) Limit the common law right of subjects to possess, sell, transport, or deal in the protected creatures.

3. The establishment of officials charged either with the enforcement of the protective enactments, or with the work of artificially multiplying the protected creatures.

4. The specification of penalties incurred by the violation of the protective enactments, and of procedure for bringing offenders to punishment.

QUADRUPEDS SELECTED AND SPECIFIED FOR PROTECTION.

IN ONTARIO the following quadrupeds are protected by statute, and their close seasons set as follows:

Elk, Moose, Reindeer, Cariboo. Absolutely close to Oct., 1895.

Deer. Close between 20th Nov. to 15th Oct. next.

Hares. Close between 15th March to 1st Sept.

Beaver, Mink, Muskrat,

Sable, Marten, Otter,

Fisher.

} Close between 1st May to 1st Nov.

In addition to the above, the following quadrupeds, or young of quadrupeds, are protected in the Commonwealths named:

FAWNS in the spotted coat cannot be legally killed at any season in British Columbia, New York, Pennsylvania, Oregon, Michigan, California, Colorado.

DOES cannot be legally killed at any season in Colorado, California.

SQUIRRELS—

Close seasons.

Connecticut. 1st January to 1st October.

Illinois. 15th December to 1st June next.

Indiana. 20th December to 1st June next.

Massachusetts. 1st March to 1st September.

New Hampshire. 1st Jan'y to 1st September.

New Jersey. 20th Dec. to 1st Nov. next.

(Variable by districts.)

New York. 1st February to 1st August.

Ohio. 15th December to 1st July next.

Pennsylvania. 1st Jan'y to 1st September.

Rhode Island. 1st Jan'y to 1st September.

Wisconsin. 15th Dec'r to 1st August next.

Kentucky. 1st February to 15th June.

RACCOON—

New Hampshire. 1st Jan'y to 1st September.

Missouri. 1st April to 1st November.

(NOTE.—“Rabbits or hares” is the term employed (where Ontario law specifies “hares” only) in New foundland, Nova Scotia, New Hampshire, New York, Ohio, Pennsylvania, Wisconsin.)

PROVISIONS FOR ENCOURAGING THE DESTRUCTION OF PREDACEOUS ANIMALS OR BIRDS THAT DESTROY DEER, BIRDS' EGGS, ETC.

ONTARIO.

WOLF BOUNTY.—Bounty of \$6 to be paid by County Treasurer for any wolf killed within county, or within one mile of a settlement in the county.

NEW YORK.

Bounty of \$10 for each bear, \$30 for each grown wolf, \$15 for each pup wolf, \$20 for each panther killed in the State. County Treasurer to pay and charge to the State taxes.

MAINE.

Bounty of ten cents per head for crows.

EDIBLE BIRDS SELECTED AND SPECIFIED FOR PROTECTION AT CLOSE SEASONS MENTIONED IN ONTARIO.

Names of birds.	Close seasons.
Grouse, Pheasant, Prairie Chicken, } Partridge.....	15th Jan'y to 1st September.
Quail } Turkey }	15th Dec'r to 15th October next.
Woodcock	1st January to 15th August.
Snipe } Rail } Plover }	1st Jan'y to 1st September.
Swans } Geese }	1st September to 1st May next.
Duck } Waterfowl }	1st Jan'y to 1st September.

In addition to the above, the following edible birds found or believed to be found in Ontario are protected in the Commonwealths named, at the times or in the manner specified :

WILD PIGEON.—Discharge of firearms forbidden in Indiana within a half-mile of the roosts. Ohio a half-mile. Pennsylvania one mile. Michigan five miles, and netting within two miles forbidden during entire hatching season. Rhode Island forbids netting at any time.

WOOD DUCK—	Close seasons.
Kentucky.....	1st May to 15th September.
Massachusetts.....	15th April to 1st September.
SAND PIPER—	
Massachusetts.....	1st May to 15th July.
New Hampshire.....	1st Jan'y to 1st September.
ALL SHORE BIRDS—	
Massachusetts.....	1st May to 1st September.
STARLING—	
New York.....	1st January to 1st October.
MEADOWLARK—	
Missouri ..	1st February to 1st August.
Nevada ..	1st April to 1st September.
CURLEW—	
New York.....	1st January to 1st October.
North Dakota ..	15th May to 1st September.
BITTERN—	
Nevada ..	1st April to 1st September.

ENACTMENTS FORBIDDING PRACTICES PECULIARLY DESTRUCTIVE TO GAME QUADRUPEDS OR BIRDS.

ONTARIO LAW.

Forbids molestation of birds' eggs.

- " use of traps (except for fur-bearers), nets, snares, gins, baited lines, and similar contrivances.
- " shooting from batteries, swivel guns, sunken punts, etc.
- " night shooting.
- " poisoning.
- " possession of illegal devices (which may be summarily destroyed by any person with legal impunity).

The above prohibitions are common to nearly all the Provinces and States.

Prohibitions as follows are found in the laws of the Commonwealths named :

HOUNDING OF DEER.—Forbidden in Indiana, Maine, Michigan, Minnesota, Montana (but dogs may be used to track wounded deer), New York (some counties), Pennsylvania, Utah, Virginia (temporarily in some districts), West Virginia (5 years), Washington, Wisconsin, British Columbia (west of Cascade Mountains), Newfoundland (caribou), Nova Scotia (caribou), Quebec.

(Generally dogs found illegally running deer may be killed with impunity by anyone).

WATERSHOOTING OF DEER.—Forbidden in Michigan, Pennsylvania.

ARTIFICIAL SALT LICKS.—Forbidden in New York.

ALL HUNTING FOR PROFIT.—Forbidden in Tennessee and some of the Pacific Coast Territories or States.

KILLING FOR HIDES AND HORNS ONLY.—Forbidden in Colorado, California, and inferentially in many other States.

SHOOTING FROM STEAM OR SAIL BOATS.—Forbidden in Connecticut, Illinois, Maryland, Massachusetts, New York, Pennsylvania, Wisconsin (also prohibits shooting from sculled boats). Illinois prohibits shooting from steam launches.

SHOOTING FROM ARTIFICIAL AMBUSH.—Wholly prohibited in Illinois, beyond 100 yards from shore in Maryland, 3 rods in New Jersey, 20 rods in New York, beyond shore in Wisconsin, Washington Territory, and specified counties of North Carolina.

GUNS EXCEPT THOSE FIRED FROM SHOULDER.—Generally prohibited. Quebec forbids use of all guns over calibre 8.

LIMITATIONS OF COMMON LAW RIGHTS OF POSSESSION, SALE, DEALING IN, TRANSPORTING OR EXPORTING GAME ANIMALS OR BIRDS.

ONTARIO.—Limits right of possession to shooting season and 15 days later, except that possession for possessor's family consumption is always legal; onus of proving legal killing and possession to be on possessor. Forbids hunting deer with intent to export.

Forbids dealing in partridges or quail before 15th October, 1892.

Does not attempt to deal specially with transportation.

Exportation of deer, wild turkeys, quail, partridge, prairie fowl, woodcock, prohibited by (R. S. Canada, Cap. 33 Sec. 7) Dominion law.

In other North American Provinces and States the rights of possession, sale marketing, dealing, transportation, etc., are limited as follows:—

Throughout the entire close season for game animals or birds these rights are in abeyance in Arkansas, California, Colorado, Connecticut, Delaware, Idaho, Illinois, Indiana, Kansas, Kentucky, Louisiana, Maine, Maryland, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, North Dakota, South Dakota, Ohio, Oregon, Rhode Island, South Carolina, Virginia, Washington Territory, West Virginia, Wisconsin, Manitoba, New Brunswick, North-West Territories.

DELAWARE.—Dealers in game required to take out licenses (\$20). Common carriers forbidden to transport except on affidavit that game was legally killed.

ILLINOIS.—Prohibits dealing in or transportation of quail, grouse, or squirrel killed in the State. Right of sale of other game limited to shooting season and five days after.

IOWA.—Sale legal five days after shooting season ends. Transportation illegal except on affidavit as in Delaware. Number of birds that may be transported for one person in one day limited to 12.

MICHIGAN.—Sale legal eight days after shooting season. Transportation, legal five days after shooting season.

MINNESOTA.—Allows three days for sale after shooting season. Forbids transportation of illegally killed game.

MONTANA.—Forbids marketing or sale of grouse, partridge, quail. Possession and sale of other game limited to shooting season.

NEW HAMPSHIRE.—Transportation limited to shooting season. Otherwise the law as in Ontario.

NEW JERSEY.—Licensed dealers may sell for ten days after shooting season.

NEW YORK.—Transportation of venison during and for five days after shooting season permitted if accompanied by owner, but he can have but one carcass or part thereof. Heads and feet may be freely transported. Possession of wild fowl on land not apparently limited, but limited to shooting season on water. Transportation of birds killed in forest preserve, limited to such as are accompanied by owners. Possession and sale of the following are limited to close season, with the exceptions signified below. These curious exceptions appear to be based on a wish to enable dealing in game during the Christmas and subsequent holiday season, provided legal killing proved :

Close season.

May be sold.

Hare and Rabbit.. 1st Nov. to 1st Feb next.. All December.

Woodcock } 1st Jan. to 1st Sept All December.

Grouse } 1st Feb. to 1st Aug. All January.

Squirrel..... 15th Aug. to 1st Nov.... Up to 15th December.

NORTH DAKOTA.—Not more than 25 game birds to be transported for one man in one day, and no one to have more in possession.

PENNSYLVANIA.—Grouse, quail, and woodcock may, be sold, possessed, transported for 15 days after close season begins. Venison, which may be killed from 1st October to 15th December, cannot be offered for sale nor transported after 30th November (a unique provision). Possession and sale of other game to be limited to shooting season.

TEXAS.—Sale of venison permitted up to 10 days after shooting season.

UTAH.—Simply prohibits possession of unlawfully killed game.

VERMONT.—Simply prohibits possession of unlawfully killed game.

WYOMING.—Prohibits sale and importation of venison. Sale of other game limited to shooting season.

BRITISH COLUMBIA.—Sale of game legal three days after shooting season.

NEWFOUNDLAND.—Possession and sale of venison limited to 18 days after shooting season. Sale of other game limited to shooting season.

NOVA SCOTIA.—Sale of venison limited to shooting season and five days after.

QUEBEC.—Transportation of venison and all game birds limited to shooting season and 10 days after.

IMPORTATION AND EXPORTATION.

WYOMING.—Forbids importation of indigenous game, except on affidavit to be taken by carriers that the game was killed outside of State.

MASSACHUSETTS.—Limits right of selling quail which have been imported, to period between 15th October and 1st May.

The statutes of the following States and Provinces forbid *exportation* of game as mentioned:—

ARKANSAS.—Forbids any exportation of game.

CONNECTICUT.—Forbids export of woodcock, grouse and quail.

DELAWARE.—Export for sale or profit confined to dealers paying license of \$500 per annum. Any sportsman may carry away game which he has legally killed. No transportation for export except on affidavit, a copy of which the common carrier must have, that the game has been legally killed, ducks and geese excepted.

ILLINOIS.—Forbids export of quail, grouse, turkey, squirrel.

INDIANA.—Forbids export of deer, grouse, quail, duck, woodcock.

IOWA.—Forbids export of any game.

MASSACHUSETTS.—Forbids export of woodcock, quail, grouse.

MICHIGAN.—Forbids export of deer, grouse, quail, turkey.

MINNESOTA.—Forbids export of all kinds of game.

MISSISSIPPI.—Authorizes counties to forbid exportation.

NORTH CAROLINA.—Forbids export of quail, grouse.

NORTH DAKOTA.—Forbids export of deer, grouse, duck, snipe, goose, curlew plover.

SOUTH DAKOTA.—The same as North Dakota.

VERMONT.—Forbids export of woodcock, grouse.

WISCONSIN.—Forbids export of all game.

WYOMING.—Forbids export of all big game.

BRITISH COLUMBIA.—Forbids export of all game.

MANITOBA.—Forbids export of all game, except on Government permit.

NEW BRUNSWICK.—Forbids export of all game except ducks.

NEWFOUNDLAND.—Forbids export of all venison, except on permit.

NORTH-WEST TERRITORIES.—Forbids export of all game.

NOVA SCOTIA.—Forbids export of deer hides.

LIMITATIONS AS TO NUMBER OF GAME ANIMALS OR BIRDS THAT MAY BE KILLED, POSSESSED, OR TRANSPORTED.

ONTARIO.—Party clause *re* deer. Not more than five deer per season may be killed by one person. Not more than eight deer per season may be killed by party of two. Not more than twelve deer per season may be killed by party of three. Not more than twelve deer per season may be killed by any party.

IOWA.—Forbids the killing of more than 25 grouse, woodcock or quail in one day by one person, or possession of more by one person or corporation, except by those who have received for lawful transportation.

NORTH DAKOTA, SOUTH DAKOTA.—Same as Iowa, with addition of duck, brant, plover, and curlew to the list.

MAINE.—Forbids any one person to kill or have in possession, except alive, more than one moose, two caribou, or three deer in any one season.

NEW BRUNSWICK.—Same as Maine.

NEWFOUNDLAND.—Licensed persons (\$50 non-residents ; \$10 residents) ; may kill not more than 5 stag and 3 doe caribou in a season.

NOVA SCOTIA.—No one person shall kill more than two moose and four caribou in a season.

PROVISIONS BY WHICH THE RIGHT TO KILL GAME, OR TO DEAL
IN GAME IN SEASON, IS CONFINED TO PERSONS QUALIFIED
BY RESIDENCE, OR LICENSE, OR PERMIT.

ONTARIO.—The Ontario Statute 36 of 1888, provides that none but residents of Ontario and Quebec may kill deer in the Province, except upon permit (\$10) from Commissioner Crown Lands.

ARKANSAS.—Declares game and fish State property, and the killing thereof a privilege (probable effect to limit the privilege to residents.)

DELAWARE.—Non-residents forbidden to kill or possess game or fish except they have membership in the Delaware Game Protective Association. Non-resident membership \$5 first year, \$2 subsequent years. Resident membership \$2 each year. Residents may take game without membership in Association. All members of Association may arrest offenders. Half of fines to Association, half to informer. \$100 penalty for using transferred certificate of membership.

FLORIDA.—Non-residents required to take annual licenses (\$25) from clerk of county in which they are hunting.

MARYLAND.—Non-residents required by various county enactments to take county license annually, at from \$4.50 to \$9. In some counties shooting by non-residents is prohibited.

MISSOURI.—Non-residents prohibited from taking game.

NEW JERSEY.—Non-residents required to take licenses from Game and Fish Protective Societies, wherever these have jurisdiction ; but there is only one such society. Its jurisdiction extends over only six counties, and the membership is \$2 per annum to non-residents.

SOUTH CAROLINA.—Non-residents hunting or fishing for profit, \$500 per annum county license.

TENNESSEE.—Non-residents excluded under various penalties by most county by-laws.

VIRGINIA.—Non-residents prohibited from killing wild-fowl below tide water.

BRITISH COLUMBIA.—Non-residents, except officers H. M. Army and Navy, required to take licenses (\$50), which permit holders to kill not more than 10 deer, 2 bull elk, 3 reindeer, 5 caribou, 8 mountain sheep, 8 mountain goats.

MANITOBA.—Non-residents required to take \$25 license annually.

NEW BRUNSWICK.—Non-residents required to take \$20 annual license, except officers H. M. Army and Navy for whom fee is \$5.

NEWFOUNDLAND.—Residents required to take \$10 license to kill big game; non-residents \$50 license, Oath required that license-holder will not kill more than 5 stag and 3 doe caribou in one year.

NOVA SCOTIA.—Non-residents required to take license at \$30 for moose and other game, and \$10 for birds; except officers of H. M. Army and Navy, for whom fee is \$5. Not more than 2 moose and 4 caribou to be killed on one license.

QUEBEC.—Non-residents required to take license at \$20 per annum. Not more than 2 moose, 3 deer and 2 caribou on one license. No shooting of any kind for non-residents without license.

EXCEPTIONS IN FAVOUR OF POOR SETTLERS, PIONEERS, ETC.

TEXAS.—Excludes certain counties from operation of the game and fish laws.

WYOMING.—Any actual resident may at any time kill big game for the purpose of supplying himself and family with food in reasonable quantities, but must not sell any part of the carcasses.

NEWFOUNDLAND.—Notwithstanding anything in the Act "any poor settler may kill any caribou (or game), for the immediate consumption of himself and his family," or, in season, he may kill as many as ten caribou for sale.

N. W. TERRITORIES.—Any traveller, family, or person in a state of actual want, may kill game or take eggs for satisfaction of the want, but no more.

QUEBEC.—East and north of Bellechasse and Montmorency "the inhabitants, for the purpose of procuring food only, may at all seasons of the year," (not at night) kill any of the game birds mentioned in Act.

TRESPASS SHOOTING AND FISHING — ENACTMENTS AFFORDING SPECIAL PROTECTION TO GAME AND FISH ON PRIVATE LANDS.

ONTARIO.—Cap. 101 R.S.O. 1887. An Act respecting petty trespasses, provides that any person trespassing on wholly enclosed property shall be liable to a fine of from \$1 to \$10. But there is no clause specially directed against trespassers with hunting or fishing implements.

ARKANSAS.—Makes hunting on private lands without owner's consent a misdemeanor; fine not less than \$10 or more than \$100.

CALIFORNIA.—Many Acts local to named counties make the hunting or fishing trespasser guilty of misdemeanor, fines varying from \$25 to \$100, with imprisonment in default.

COLORADO.—Trespassing hunters or anglers are liable to fine \$25 to \$100, with imprisonment in default of fine.

CONNECTICUT.—On lands around which specified notices have been placed, warning off trespassing hunters, these shall be liable to fine \$7 to \$25, exclusive of damages of trespass. Shall in addition forfeit \$10 to owner or occupant. Trespasser having dog or gun is *prima facie* guilty.

DELAWARE.—Trespasser with dog and gun or gun only, fine \$5, or forfeits gun, which is publicly sold to pay fine if not redeemed within 30 days.

COLUMBIA (D).—Trespassers for shooting or fishing liable to exemplary damages \$100 and \$10 additional for each offence. Possession of implements *prima facie* evidence. But owners or occupants must put up sign boards as specified, in order to have the benefit of this.

GEORGIA.—Trespassers with firearms or implements guilty of misdemeanor. Penalty up to \$50 fine and 30 days gaol. Lands must, however, be posted, or trespasser must have received warning off. Similar laws against trespassing with dog, gun, or fishing implements, or with obvious intent to hunt or fish, exist in Illinois, Indiana (but not as to wet or overflowed lands), Maine (only as to islands in salt water), Maryland (by various county laws), Massachusetts, Michigan (as to enclosed lands), Minnesota, Mississippi, Missouri (as to enclosed lands); New Hampshire (trespasser to pay \$1 for each bird, besides fine); New Jersey, New York (enclosures); North Carolina, Ohio, Oregon, Pennsylvania (fish ponds); Rhode Island, South Carolina (fish ponds); Tennessee, Vermont, Virginia, Washington (enclosures); West Virginia, Manitoba (a mere prohibition of trespass to hunt.)

The trespasser with hunting or fishing implements is, in these States, usually declared guilty of a misdemeanor, liable to fine, exemplary damages, and imprisonment in default; but usually the lands must be posted with conspicuous notices, or the trespasser have been previously individually warned off. Private preserves for game and fish are still more generally protected by enactments making trespass criminal.

ENACTMENTS FOR THE PROTECTION OF FISH.

ONTARIO.

Section 13, Cap. 32, R.S.O., 1887, provides that the Lieutenant-Governor in Council may make regulations from time to time touching the fisheries of the Province, and under this section the following regulations (among others) have been made:—

Non-residents, persons not domiciled in Province, are forbidden to take fish except under permit from Commissioner of Crown Lands.

No person except under lease, license, or permit, shall catch fish in water adjoining ungranted Crown Lands.

Spawning fish and spawning beds to be unmolested except by legal authority.

By hook and line, and not otherwise, can anyone take brook trout, salmon trout, whitefish, bass, pike, pickerel, maskinonge, tulibee, grayling, herring or perch, except in waters leased for net fishing.

Explosives, chemicals, etc., not to be employed in taking fish.

Torch-light or other artificial light fishing prohibited.

During close seasons set by lawful authority the taking and possession of fish is prohibited.

No obstruction by net, trap, weir, or otherwise shall be offered to free passage of fish up and down stream. Fishways to be in no manner obstructed or resorted to for fishing purposes.

Offal of no sort to be put in water but to be burned 20 yards distant from inland.

CLOSE SEASONS.

Speckled trout	15th Sept. to 1st May next.
Pickrel (doré)	15th April to 15th May next.
Bass, maskinonge	15th April to 15th June next
Whitefish, salmon-trout	1st Nov. to 30th Dec. next.

RESPECTING FISH PROTECTION IN RIVERS, BROOKS, AND INTERIOR LAKES OR PONDS, OF OTHER PROVINCES OF CANADA AND STATES OF THE UNION.

The following fish found in Ontario are elsewhere protected as specified:—

PIKE.—Close season in Connecticut, Iowa, New Hampshire and Pennsylvania.

PERCH.—Close season in Kansas and Maine.

EELS (lamper).—Close season in New Hampshire.

MAMMOSE or young STURGEON under 3 feet, absolutely protected in New Jersey.

BULL HEADS.—Protected in New York (Lake St. George.)

LIMITATIONS OF AMOUNT OF CERTAIN FISH THAT MAY BE TAKEN OR POSSESSED AT ONCE.

MAINE.—Not more than 50 lb. of trout.

NEW HAMPSHIRE.—Not more than 10 lb. trout.

WISCONSIN.—Not more than 10 lb. of bass, or pickerel less than 1 lb. in weight.

LIMITATIONS OF SIZE OF FISH THAT MAY BE TAKEN.

COLORADO forbids taking or possession of trout less than six inches long.

DELAWARE forbids the taking or possession of trout or bass less than six inches long.

MAINE forbids taking or possession of trout less than five inches long.

MICHIGAN forbids taking or possession of trout or grayling less than six inches long.

NEW HAMPSHIRE forbids taking or possession of trout less than five inches long.

NEW JERSEY forbids taking or possession of trout less than six inches, bass seven inches long.

NEW YORK forbids taking or possession of trout less than six inches, bass three-quarters of a pound.

PENNSYLVANIA forbids taking or possession of bass less than six inches, trout five inches, pickerel six inches.

VERMONT forbids taking or possession of bass less than ten inches, trout six inches long.

WISCONSIN forbids taking or possession of bass or pickerel less than 1 lb (not to be sold).

WYOMING forbids taking or possession of trout less than six inches.

NEW BRUNSWICK forbids taking or possession of bass less than 2 lb.

TRANSPORTATION of brook trout from forest preserves not permitted in New York.

No CAPTURE of trout for sale permitted in Michigan or Oregon.

THE PLANTING of pike, pickerel, bass or other predaceous fish in waters not previously containing such fish is forbidden in New York, Maine, Minnesota, New Hampshire and some other States.

COMMISSIONERS, WARDENS, PROTECTORS AND OTHER OFFICIALS CHARGED SPECIALLY WITH ADMINISTRATION OR ENFORCE- MENT OF LAWS FOR THE PROTECTION OR MULTIPLICATION OF GAME AND FISH.

Thirty-six States of the Union have Fish Commissions, whose main purpose is to propagate fish artificially and restock public waters. The cost of the services is borne by the State treasuries, and this appropriation of money appears to be universally popular. These Commissions commonly maintain hatcheries from which fry or young fish are distributed at the public expense. The great success attending fish-propagation is known to the Ontario Commission generally, and need not be particularly illustrated in the present memorandum. One point, however, may be particularly noted, viz: that the free distribution of trout fry, as in Michigan and New York, appears a main cause of the popularity of the Commissions, from which popularity the State grant comes regularly and increases from year to year. The Michigan Commission, whose service is admirable in all respects, has restocked many depleted waters, and caused trout to abound in hundreds of streams and over vast areas where no trout were ever found before the Commission's work began. The trout-work gives universal satisfaction; the people all seem to know the facts and to be proud of them. Ontario has hundreds and probably even thousands of depleted streams that

could easily be made to yield abundant supplies of trout, which would annually give the people an excellent food, far surpassing in value the outlay required for restocking these streams. This work could be undertaken forthwith, and without any settlement of the question pending between the Federal and Provincial Governments as to their respective jurisdiction over interior waters. Some of the questions touching fish distributed by the Commission have been arranged with intent to educate public opinion on this important matter.

In order to illustrate the nature of the different sorts of services established for the administration or enforcement of laws for the protection of game and fish the following sketches of several organizations are given.

ONTARIO.

It cannot be said that the Province has any organized service for Game and Fish protection, its condition in this respect being far behind that of several Canadian Provinces and all the immediately adjacent States of the Union. The provision that game inspectors may be appointed by municipalities is inoperative, and the laws touching Game and Fish are everywhere left to be disregarded, unless utilized by informers for their own rather than the public good. This manner of leaving the laws to the operation of nobody in particular is less advanced than that which obtains in some of the least civilized States and Territories.

NEW BRUNSWICK

The Lieutenant-Governor-in-Council appoints a Chief Game Commissioner, and a Game Warden for each county. County councils may appoint parish wardens. One-half of fines accrues to informers and one-half to the Warden prosecuting. If the prosecutor be not a warden, one-half the fine goes to the Chief Game Commissioner. Persons or clubs leasing salmon-angling waters are authorized to employ protectors who are empowered by the Government.

NORTH-WEST TERRITORIES.

The Lieutenant-Governor-in-Council may appoint game guardians with the powers of constables to enforce the game laws; all legally seized game to belong to the guardian.

QUEBEC.

The Commissioner of Crown Lands appoints, from among the permanent officials of his department, a Provincial Game Superintendent and as many local game-keepers as he may deem requisite. Societies and clubs organized for the sole purpose of protecting fish and game are encouraged, incorporated, and enabled to hold property. All Crown lands and Crown timber agents are *ex-officio* game-keepers.

MICHIGAN.

The Governor appoints a Game and Fish Warden.

DUTY OF WARDEN.—To enforce laws touching game and fish, and bring proceedings in prosecution.

POWER OF WARDEN.—That of sheriffs to serve processes; may arrest without warrant on any day, and bring summarily before magistrate.

DEPUTY WARDENS.—These are appointed by the warden; not more than three in each county, and they must be residents of county.

PAYMENT OF DEPUTIES.—Deputies are paid by county supervisors.

REMARKS.—The two latter provisions have not been found to work altogether well in practice. The opinion of the Michigan Commissioners and Warden is that the State should pay the deputies, and that these should be transferable from any one county to any other at order of the warden. The county supervisors do not generally allow the deputy-wardens sufficient salaries, hence they cannot afford to give sufficient attention to their duties. Nevertheless the Michigan system is a considerable advance on that which leaves the operation of Game and Fish Laws to informers, and the office of chief warden has been more than self-sustaining, because the fines accruing to the State by action of the official more than pay his salary and expenses.

MAINE.

The Fish Commissioners of Maine are Game Commissioners also, and (unlike the Michigan Fish Commissioners) are charged with the enforcement of the Fish and Game Laws, as well as with the supervision of the fisheries and fish-propagation. The Maine Commissioners appoint Fish and Game Wardens, who receive, for serving criminal processes, the same fees as sheriffs. Half fines go to prosecutors.

WISCONSIN.

Governor appoints four game wardens to enforce Game and Fish Protection Laws; term, two years, or till successor appointed; salary \$600, and \$250 maximum for expenses. These wardens appoint their own deputies, who are paid like constables by fees, and by receiving one-half of fines, the other half going to county school fund.

CONNECTICUT.

The County Commissioners (councillors) are required to appoint County Game and Fish Wardens, who may deputize any person to assist them.

DELAWARE.

The enforcement of the laws appears to be left very much to the incorporated Delaware Game and Fish Protection Association, membership in which is open to all on annual fee of \$2 for residents, \$5 for non-residents. Half of all fines accrue to this association.

NEW YORK.

The Governor appoints three Commissioners of Fisheries; no salary; \$600 allowed to each for expenses; the Board authorized to employ a secretary at \$2,000 per year. The duties of the Commissioners include supervision of the Game and Fish protective service, and the appointment of the officers thereof. The Game and Fish Protectors number twenty; one of these is designated as Chief Protector by the Commissioners, he receives \$2,000 salary and \$1,000 maximum for expenses; the sub-protectors \$500 salary and maximum of \$300 for expenses; in addition one-half of fines accrue to any protector successfully

prosecuting. The Chief Protector gives \$1,000 bond, and the sub-protectors give \$500 bond for faithful discharge of their duties. A clerk at \$800 salary is allowed to the chief protector. The Board of Commissioners may give the powers of sub-protectors to persons recommended and paid by county supervisors or incorporated associations for the protection of Fish and Game. These protectors may be moved from any district to any other. Duties of protectors are to enforce all State laws and county ordinances for protection of fish and game. They may summarily destroy illegal nets. Any protector may arrest an offender without warrant, and take him immediately before justice of the peace or other magistrate for trial.

This system is the most perfect and efficient in the Union; it is described by the Commissioners as popular, and the increase of deer thereunder has been specially notable.

SPECIAL DEPARTMENTS.—Services, or officials such as Game and Fish Wardens or Protectors, are provided for or maintained also in California, Colorado, Illinois, New Hampshire, Pennsylvania, Washington and Vermont.

The systems vary, but usually resemble either that of Michigan or that of Connecticut.

PENALTIES.

The practice of many or most of the States of the Union is to declare that violations of any of the clauses of Fish and Game Acts are misdemeanors, and the penalty a fine above a stated minimum, and below a stated maximum, with imprisonment in default of payment; but it is clear that, no matter how severe the penalties may be, the laws as to Fish and Game will not be respected because of the penalties, unless special measures for the enforcement of the laws be taken, in which case moderate penalties will be as effective as severe ones. There appears to be every reason to believe that the observance of Fish and Game laws can be secured (1) by popularizing such laws through the maintenance of game fish hatcheries and the free distribution of fry therefrom; (2) by maintaining special officials to put the laws into operation.

Appended hereto is a brief summary of the laws, Provincial or Federal touching the Game and Fish of the Province.

ONTARIO GAME LAW.

(CAP 221 R. S. O. 1887 AND AMENDMENTS 1888 AND 1890.)

CLOSE SEASONS.

Elk, Moose, Reindeer, Caribou,	Close to Oct. 1895.
Deer.....	Close 20th Nov. to 15th Oct. next.
Grouse.....	“ 15th Jan. to 1st. Sept.
Quail, Turkey.....	“ 15th Dec. to 15th Oct. next.

Woodcock.....	Close 1st Jan. to 15th Aug.
Snipe, Rail, Plover.....	" 1st Jan. to 1st Sept.
Swans, Geese.....	" 1st Sept. to 1st May next.
Duck, Waterfowl.....	" 1st Jan. to 1st Sept.
Hares.....	" 15th Mar. to 1st Sept.

MARKETING lawful 15 days after shooting season, but no dealing in partridge or quail till 15th Oct. 1892.

POSSESSION for owner's consumption always lawful, but onus of proving legal killing is on owner.

EGGS.—None to be destroyed or had in possession, except by authority of Commissioner of Agriculture.

TRAPS, SNARES, NETS, prohibited, and may be summarily destroyed by any person with impunity.

BATTERIES, swivels, punt-guns, sunk punts prohibited.

NIGHT and fire hunting prohibited.

FUR-BEARERS, beaver, mink, muskrat, sable, martin, otter, fisher. Close 1st May to 1st Nov.

MUSKRAT HOUSES never to be molested.

TRAPS, etc, set out of season may be summarily destroyed.

TO PROTECT one's preserve or property fur-bearers may be killed as vermin at any time.

PENALTIES.—For illegal killing or molestation of

Moose, Elk, etc.....	Fine \$10 to \$50 each offence
Birds or Eggs.....	" \$5 to \$25 " specimen
Fur-bearers.....	" \$5 to \$25 " offence
Other breaches.....	" \$5 to \$25 " "

PROSECUTOR to receive all fines unless collusion suspected.

IMPORTED LIVE GAME on preserved lands not to be killed without owner's consent.

POISONING of game prohibited; exposure of poison where dogs or cattle are likely to get it, prohibited.

EXPORT.—Hunting deer, quail and partridge for export prohibited, and onus of proving other intention to be on owner of dead deer or birds.

HOUNDS.—None to be at large in deer districts in close season.

GAME INSPECTORS may be appointed by municipalities. Duties :—Enforcement of laws, instituting prosecutions; may search suspected parcels without warrant. Must have search-warrant for suspected buildings.

WHO MAY SHOOT DEER.—Only residents of Ontario and Quebec. Others liable to a penalty of from \$10 to \$20 each animal. Does not apply against shareholders in preserves, nor persons authorized by Commissioner of Crown Lands.

PERMITS may be issued at \$10 per year by Commissioner of Crown Lands.

PARTY CLAUSE.—Five deer per season to one man. Eight deer per season to two in party. Twelve deer per season to three in party. Not more than twelve to any party. Penalty, \$5 to \$20 per animal, and gaol not more than three months for default.

DEFAULTS in any fine make liable to gaol for three months. Conviction not to be quashed for lack of form.

ACCUSED may be compelled to give evidence.

MAGISTRATES and Justices of the Peace in counties or municipalities where offence committed to hear and adjudge cases.

EXPORTATIONS.—R. S. Canada (Dominion Law) cap. 33 section 7. Forbids exportation or attempt at exportation of deer, wild turkeys, quail, partridge, prairie fowl, woodcock, under penalty of \$100.

SMALL BIRD ACT.

(CAP 222. R. S. O. 1887.)

No BIRDS, except game birds, eagles, falcons, hawks, owls, wild pigeons, black-birds, crows, English sparrows, and ravens to be at any time killed or molested, except that Cherry birds and robins may be killed during fruit season on fruit owners' grounds by themselves or agents.

ALL MANNER of possession, all illegal devices for capture prohibited, and devices may be summarily destroyed by anyone with impunity.

NESTS, YOUNG, EGGS, protected absolutely. Anyone finding a protected bird in possession of another may seize, take before a Justice of the Peace, who shall liberate live birds and confiscate dead ones. All constables and market clerks to seize such birds when found illegally in possession.

PERMITS to take birds or eggs for scientific purposes may be issued by Commissioner of Agriculture.

PENALTIES. \$1 to \$20 fine each offence, all to go to prosecutor except collusion suspected.

GAOL. 2 to 20 days in default of fine.

FORM, no conviction to be quashed for lack of.

WOLF ACT.

(CAP 223, R. S. O. 1887.)

BOUNTY. \$6 to be paid to any person bringing wolf head and proving wolf killed in county or within one mile of settlement in county. Justice of the Peace to give certificate entitling wolf-killer to receive \$6 from County Treasurer if he has money; if not, the certificate shall be legal tender for the County taxes.

FISHERIES ACT ONTARIO, 1885.

PROVIDES for leasing and managing such fisheries as may be under Provincial Legislative control. No close seasons specified in body of Act. No protective clauses except that Commissioner of Crown Lands may authorize lands to be set apart for artificial propagation.

REGULATIONS UNDER THE ACT :—LEASES. Leases of fishing rights on Crown Lands shall extend one chain back from water.

PERMITS or licenses granted on fees to be set by Commissioner of Crown Lands, and valid till close of angling season.

EXCESSIVE or wasteful fishing ;—penalty—cancellation of lease.

PERSONS NOT DOMICILED in Province cannot take fish without permits from Commissioner of Crown Lands.

No PERSON except under lease, license, or permit, shall catch fish in water adjoining ungranted Crown Lands.

SPAWNING FISH and spawning beds not to be molested except by legal authority.

UNLAWFUL to fish for or catch, in ungranted water, brook trout, salmon trout, whitefish, bass, pike, pickerel, maskinonge, tulibee, gayling, herring, or perch otherwise than by angling, except in waters leased for net-fishing.

EXPLOSIVES, chemicals, etc., prohibited from use in killing fish.

ARTIFICIAL LIGHT and torch light fishing prohibited.

DURING CLOSE SEASONS set by lawful authority, the taking and possession of fish are forbidden.

No OBSTRUCTION by net, trap, weir, or otherwise shall be offered to free passage of fish up or down stream.

FISHWAYS to be in no manner obstructed or resorted to for fishing purposes.

OFFAL of no sort to be put in water but to be burned twenty yards inland

CLOSE SEASONS.

Speckled trout.....	Close 15th Sept. to 1st May next.
Pickrel (doré).....	“ 15th April to 15th May
Bass, Maskinonge.....	“ 15th April to 15th June
Whitefish, Salmon trout	“ 1st Nov. to 30th Dec.

DOMINION LAW.

(CAP 95, 1886. SEC 15.)

LIME, CHEMICAL SUBSTANCES, or drugs, poisonous matter, dead or decaying fish, or any other deleterious substance, shall not be thrown into or allowed to pass into any water. Penalty \$100, but the Minister of Marine may make exceptions in public interest.

THE GAME AND FUR-BEARING ANIMALS OF ONTARIO.

INTRODUCTION.

In compiling the following descriptive report, an endeavour has been made to refer only to those Birds, Fish, and Animals, which constitute the fauna of Ontario, leaving out for the most part those specimens which have been taken as rarities within its boundaries.

Free use has been made of every available source of information which might assist in making the natural history portion fairly represent the present state of knowledge in this department.

In the nomenclature and classification of the birds "The History of North American Birds," by Baird, Brewer, and Ridgway, has been closely followed as the best and most voluminous work on the subject published. The specific characters of the birds is that of the above writers, than which nothing could be more ably written. Many quotations as to origin, habits, etc., have also been made from the same work, kindly allowed by the publishers, Messrs. Little & Brown of Boston, Mass.

In the preparation of that portion pertaining to the animals the same extensive research has been observed; "Baird's History of North American Mammals," as given in one of the Pacific Railway Reports to the United States Government, has been largely drawn upon, and for the recent nomenclature a "List of the Mammals of North and Central America," made by Professor Frederick W. True, Curator of the Department of Mammals in the Smithsonian Institute at Washington, has been closely followed.

Much aid has also been given by Dr. H. M. Smith of the United States Fish Commission, Washington, D.C., who has been unceasing in his efforts to assist this work. The preparation of that portion relating to the fishes of Ontario waters

has been entrusted to Professor Ramsay Wright, Professor of Biology at Toronto University, whose name is a sufficient guarantee that what he has written upon the subject is reliable.

The illustrations which accompany the descriptions will be found useful and may be depended upon as being strictly accurate. Many of them have been taken from life, whilst the remainder have been photographed from mounted specimens found in the Smithsonian Institute at Washington, D.C., and in other well-known museums.

The compilers of these papers lay no claim whatever to originality, but have copied freely from the best works obtainable, in order that the habits of the animals referred to might be set forth correctly. Amongst the works copied from are :

Baird's North American Mammals.

Hallock's Sportsmen's Gazeteer.

Cassel's Natural History.

Wood's Natural History.

Wild Animals, by J. Fortuné Nott.

Whilst the valuable essays from the pen of Mr. W. P. Lett of Ottawa, have also furnished much valuable information.

The advice of many well-known trappers and hunters has also been obtained, and it is hoped, therefore, that the papers may prove both interesting and instructive.

In giving the dimensions of the various animals described, an average has been struck ; many specimens of the animals mentioned are larger in proportions than the figures here indicate, while others are correspondingly smaller, but the figures given will suffice for the purpose for which the papers are intended.



THE MOOSE OR EUROPEAN ELK (Male) (*Alce Americanus*).

ALCE AMERICANUS, (JARDINE).

THE MOOSE OR EUROPEAN ELK.

Prof. Baird says: "It is somewhat unfortunate that the European name of this animal, the elk, should be applied here in America to an entirely different animal or deer. Much confusion has been produced in this way, and it becomes necessary to ascertain the nationality of an author before it is possible to know exactly what the word *elk* is intended to convey."

Specific Character.—Muzzle very broad, protruded, covered with hair, except a small moist naked spot in front of the nostrils; neck short and thick; hair thick and brittle; throat rather maned in both sexes; hind legs have the tuft of hair rather above the middle of the metatarsus; the males have palmate horns. The nose cavity in the skull is very large, reaching behind to a line over the front of the grinders; the intermaxillaries are very long, but do not reach to the nasal. The nasals are very short.

Habitat.—Northern United States northward. Still found, though scarce, in Northern Ontario.

Average Size.—Equal to that of a large horse.

Average Weight.—800 to 1,000 pounds.

Average Height.—5 feet.

Average Length.—7 to 8 feet.

Average Value of Skin.—In the raw \$4 to \$5, or 40c. per pound.

It is generally conceded that the American moose is the same animal as the Swedish elk. It is certainly the largest of the deer tribe found on this continent and fully equals a horse in bulk.

The males are considerably larger than the females and often weigh over a thousand pounds.

The moose varies in colour according to season and climate, some being of an ashy gray, others of a darker gray, and a few in the autumn of a glossy black.

The extremities of the hair are generally brown or black, and dingy white towards the roots.

The young are generally of a gray brown colour which darkens with age.

The hair is coarse and strong and inclined to brittleness.

The males have their necks adorned with manes of stiff hairs varying in length from five to ten inches.

Two fleshy dewlaps hang from their throats and are covered with long black hairs. The tail is remarkable for its extreme shortness.

The legs, head, nostrils, and ears are of enormous proportions, the body short and thick, the eyes small, and the upper lip elongated, thick, ponderous and flexible. So curiously constructed is the upper lip that it is generally described as being between that of a horse and a tapir. It is square in shape and appears to be divided on account of a deep furrow in the middle. Four pairs of strong muscles arising from the maxillaries allow of rapid and varied movement of the heavy lip.

The hind hoofs of the moose are of beautiful formation, and adorned with horny spurs, or points, which make a loud clattering noise when the animal is running.

The hind legs straddle when the moose is at full speed, to prevent treading on the fore-feet.

The moose subsists by browsing, grazing being rendered almost impossible on account of the long forelegs and short neck.

The long forelegs enable the animal to reach far up into the trees and bring them down, whilst the tender branches are plucked by the huge lip and carried to the mouth. The leaves and small branches of young trees, such as birch, maple, and mountain ash, form the staple diet of the moose.

The horns are striking on account of their enormous dimensions. The young bull grows two knobs about two inches long in its first season; when a year old the knobs develop into spikes about six inches long, and remain on the head until late in spring when they drop off and are replaced by long forked horns. In the fourth year the horns branch forward and become palmated; in the fifth and sixth years they grow triangular, whilst the palmated portions end in points, the whole resembling an expanded hand. After the fifth year the most perfectly developed antlers are produced, the horns not unfrequently measuring five feet from root to extremity. The horns are cast annually after the second year, in the months of December and January, but so rapid is the new growth that a complete new set is formed by the August following. As with the deer, the horns are in velvet during the summer months, and are so tender that they may be sliced with a knife. When developed the antlers not unfrequently attain a weight of sixty pounds.

The cow carries her young nine months, and brings forth generally in the month of May.

In the first and second year one calf is produced at a birth, and after that two.

The moose suffers greatly in warm weather from flies, and most of its time is spent in the water, where it often remains for hours so deeply immersed that only the nose is visible above the surface. It reaches regularly under the water to feed on the lily roots, disappearing entirely the while, thus giving rise to the Indian belief that it can remain all day under water.

The moose swims rapidly and crosses the water from shore to shore with marvellous swiftness.

The skin is valuable for tanning purposes, but it is of no value whatever in the fur trade. It is tough and enduring, and largely used for the manufacture of moccasins.

The rutting season commences in September, and during this period the bull feeds but little for days at a stretch. He roams the forest proud and defiant, eager to do battle with all comers. His roar resounds through the forest, and is answered by the wild long call of the cow. When the rutting is over the bull presents another appearance. He is no longer a terror to his foes, but mopes along, gaunt and lean, with head lowered and staggering limbs. His fall campaign has told upon him, and he goes home to his winter haunts to recuperate and grow strong again.

An indiscriminate slaughter of this noble animal has long threatened the total extinction of the race, and it is probable that the time is not far distant when the moose, like the buffalo, will be seen no more in Canada.



THE MOOSE OR EUROPEAN ELK (Female) (*Alces Americanus*).



THE WAPITI OR AMERICAN ELK (*Cervus Canadensis*).

CERVUS CANADENSIS, (ERXLEBEN).

THE WAPITI OR AMERICAN ELK.

Specific Character.—Hoofs short, broad and rounded. Tail very short and depressed. *Larmiers* nearly as long as the eye; naked portion of the muzzle inferiorly only half as wide as the septum of the nostrils. No naked glandular space on the outer edge of the hind legs, but a short whitish patch of hairs near the upper part of the metatarsus.

In summer, general colour, light chestnut red; darkest on the neck and legs; throat and median ventral line dusky, almost black. Chin dusky, with a narrow patch of light yellowish on either side, a broad median yellowish patch under the head. Rump yellowish white, bordered by a dusky band, which extends down the posterior face of the hind legs. Winter colours more gray.

Habitat.—Virginia, California and northward through Canada. A few are still found in Northern Ontario.

Average Size—Equal to a horse.

Average Weight.—500 pounds.

Average Height.— $5\frac{1}{2}$ feet at shoulders.

Average Length.—8 feet.

Average Value of Skin.—In the raw \$4 to \$5, or 40c. per pound.

The wapiti is fittingly described as "the antlered monarch of the waste," and is one of the largest specimens of the deer tribe; not only is he this, but he is also the most beautiful and stately animal in all the deer family, and justly entitled to hold the first place among the game animals of our continent.

In size the wapiti is enormous, being as large as a horse, but withal of such compact build and faultless form as to attract immediate attention on account of his exceeding grace and beauty. The horns are magnificent and of extraordinary size, not unfrequently measuring six feet in length, and they are ornamented with brow horns, two over each eye, often growing to a length of twenty-four inches.

The other prongs or tines grow to a length of eighteen inches, and graduate to fine points as if they had been artificially prepared and polished.

The horns sweep gracefully upwards and are peculiar for their uniform regularity. Compared to the wapiti, the stag of the Scottish Highlands would be but a dwarf.

The wapiti is less vigilant and therefore more easily approached than any other of the deer tribe, and like all the big game in Canada, his species is rapidly becoming extinct.

The wapiti rut in September, and during the early part of that month the peculiar whistling of the bull is to be heard.

The rutting season is of short duration, and at its close the bulls are run down in condition and very thin, but recuperation soon takes place, and by November they are fat and in as good condition as ever.

The female brings forth her young towards the end of May, or early in June, and retires for this purpose to the woods alone.

About the same time the bulls are growing their horns, and are as thin and weak as the cows, for when it is remembered that the huge antlers grow in four months, it will be seen what a terrible drain on the animal's strength is taking place.

The cow produces only one calf at a time, which closely resembles the fawn of the red deer, even to the spots.

The gait of the wapiti is a long swinging trot, which never seems to tire the fleeing animal, and which carries it along at such speed as would enable it easily to distance an ordinary horse.

Running or galloping is exhausting to the great animal, and if his trot can once be broken, a hunter on horseback can generally get close to his game.

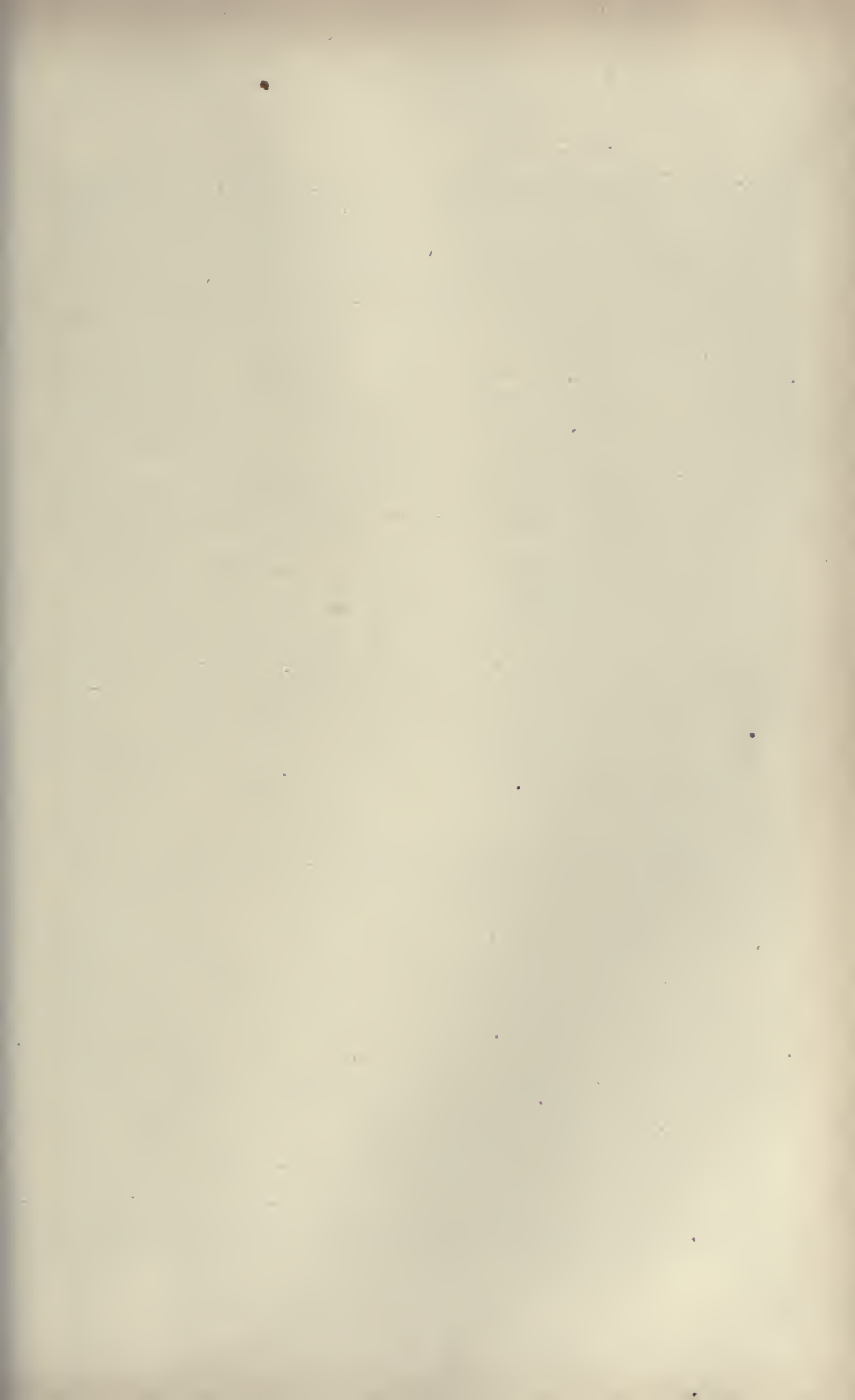
The tail of the wapiti is very short, being in fact almost rudimentary.

The flesh of the wapiti is delicious and considered an article of great delicacy.

The food consists of lichens, grass, the wild pea-vine and young branches.

The head and horns make a magnificent trophy and are sold in large quantities.

The hide is used in the leather trade for tanning purposes.





THE WOODLAND CARIBOU (*Rangifer Tarandus Caribou*).

RANGIFER TARANDUS CARIBOU, (KERR).

THE WOODLAND CARIBOU.

Specific Character.—Muzzle entirely covered with hair; the tear-bag small covered with a pencil of hairs. The fur is brittle; in summer short, in winter longer, whiter; the hoofs are broad; depressed, and bent in at the tip. The external metatarsal gland is above the middle of the leg. Horns in both sexes elongate, subcylindric, with the basal branches and tip dilated and palmated; in the females smaller. Skull, with rather large nose cavity, about half as long as the distance to the first grinder; the intermaxillary moderate, nearly reaching to the nasal; a small, very shallow, suborbital pit.

Habitat.—North Eastern North America.

Average Size.—Equal to that of a large deer.

Average Weight.—200 to 300 pounds.

Average Height.—At shoulder 4 feet.

Average Length.—6 feet.

Average Value of Skin.—In the raw 25c. to 30c. per pound.

The caribou is a near relative of the reindeer of Northern Europe, and is the most useful, if not the most comely of its race. It lacks the grand proportion of the wapiti, nor has it the grace of the Virginia deer.

The front hoofs are capable of great lateral expansion, whilst the hind ones, slightly developed in other members of the family, are considerably prolonged, a structure which, by giving the animal a broader base to stand upon, prevents its sinking too deeply into snow or morass.

The broad feet and short legs enable the caribou to swim at great speed, a matter of no small importance in a country abounding with lakes and rivers.

The running of the caribou is accompanied by a loud clattering noise, produced by the long hoofs, which separate as they press the ground and click together again as they close when raised.

From the neck of the caribou hangs a long mane of dirty white.

In summer the body is brown above and white beneath, and in winter long haired and yellowish white.

The horns are remarkable on account of their shape and size. The summit are broad and palmated, and branch backward, often as far as four feet.

The horns are light, averaging in weight from ten to twenty pounds, and it is a remarkable fact that the ornaments are worn by both sexes, whilst in all the other deer families the males alone are furnished with these weapons.

The female calves in May or June, and produces as a general rule one calf at a birth.

The food of the caribou in winter is the Lichen rangiferia, and in the summer young herbs, and the leaves and tender shoots of trees.

The flesh of the caribou is delicious and it is sought eagerly; much skill is needed, however, to capture the animal, stalking being about the only means by which it can be taken.

Unlike the moose, the caribou are not easily tamed, for although carefully handled they become wild and vicious upon attaining maturity.

The head and horns make magnificent trophies and command a ready sale.

The skin is of no value in the fur trade, but is used for leather and makes excellent moccasins and thongs. In other cold countries it is used to make dresses of, and in the Polar regions no garment worn can compare with those made of the reindeer skin for warmth and comfort.

CERVUS VIRGINIANUS, (BODDÆRT), (BROOKE.)

THE VIRGINIA DEER.

Specific Character.—Horns with the branches all from the posterior edge. Ears scarcely more than half the length of the tail. Gland of hind leg not one-eighth the distance between the articulating surfaces of the bone. Tail depressed, hairy beneath; dark brown near the tip, but encircled by white on sides and tip entirely white beneath. Winter coat, pale grayish chestnut, faintly annulated; summer, bright uniform rufous.

Chin with a traverse band of black; and behind this, one of the colour of the sides of the head.

Habitat.—Canada to Panama, all Northern Ontario.

Average Size.—Equal to that of a large calf.

Average Weight.—100 to 200 pounds.

Average Height.—4 feet.

Average Length.—5 feet.

Value of Skin in the Raw.—20c. per pound.

The Virginia deer, considering that it is a species so widely distributed, has but few appellations. In some parts it is known as the red or Virginia deer, and in others as the white tail.

In summer the coat is bright red, but as autumn approaches the colour deepens and gets more gray, until in October it is almost a mouse colour, and the deer is then said to be in the blue.

The head is long, tapering and pointed, and the eyes are large and lustrous, and in colour a bluish black.

The legs are slender but possessed of enormous muscular strength.

The body is moderately stout and flexible.

The male is furnished with horns which are symmetrical and graceful, although not large, and bend forward, whilst the points are directed downward. They are shed yearly, only to be renewed in ampler proportions. In the first year the horns are simply a corneous growth covered with short hairy skin. In the second year small straight horns appear. In the third year the buck has two antlers; in the fourth, three; in the fifth, four; in the sixth, five; after this the antlers do not always increase in number, although six or seven are sometimes seen on each side.

The doe is considerably smaller than the buck and has no horns.

The rutting season occurs in October and November, and the young are born in May or June. As a general rule two fawns are produced at a birth.

The fawns are at first of a red colour, spotted along the sides with white, but in the autumn of the first year the spots disappear.

The average length of the Virginia deer is five feet.

The food of the deer consists of green shrubs, leaves, ferns, bark and grass, an abundance of the latter being indispensable.

The favourite feeding time is at sunset, when the deer makes first for the water and then having quenched its thirst commences to browse or graze.



THE VIRGINIA DEER (Male) (*Cervus Virginianus*).



THE VIRGINIA DEER (Female) (*Cervus Virginianus*).

At one time in the history of Ontario deer were plentiful all over the Province, but gradually as the land became cleared, as railroads were built, and settlers came in to take up their abode, the race has been growing smaller and smaller. In many regions were deer were once numerous, large cities are now standing, and the deer have disappeared forever.

Wolves are also a standing menace to the species, and destroy immense numbers annually.

The multiplication of hunters, the repeating rifle, the barbarous practice of "yard and crust" hunting, and the forest fires, have also added to the general thinning out, and although it may be that in some of the wilder districts of the Province deer will always be found, there is grave reason to fear that unless prompt measures are taken in the way of preservation and protection, the deer will soon be extinct in Ontario.

The flesh of the deer is delicious, and the "haunch of venison" has been a kingly dish from time immemorial.

The head and horns are much sought after as ornaments, and command a ready sale.

The skin is used for making moccasins and thongs, is tough and enduring, and of great usefulness.

URSUS AMERICANUS, (PALLAS).

THE BLACK BEAR.

Specific Character.—Size small. Feet moderate. Fore claws not twice as long as hinder. Colour entirely uniform throughout, either black or brownish; the hairs darkest towards the tips.

Habitat.—North America from Mexico to Hudson's Bay, common in Ontario.

Average Size.—Equal to that of a very large Newfoundland dog, although it appears to be larger on account of its long soft coat, which is very thick.

Average Weight.—200 to 300 pounds.

Average Height.—3 feet.

Average Length.—4½ feet.

Value of Fur.—Per skin, average, \$5 to \$25.

The black bear is abundant in Ontario, and is easily distinguished on account of his bright black colour.

The black bear is held by some authorities to be distinct from the cinnamon bear, but experienced hunters assert that they have found both black and cinnamon cubs in the one litter, and beyond the fact that the colours differ, no distinctions appear to have been established.

The muzzle of the black bear is tan in colour, and very often a white mark is found on the throat. This animal is shy and rarely seeks an encounter with man, but when cornered or forced to fight becomes at once fierce and dangerous.

The black bear is little given to animal food, and unless pressed by hunger will restrict itself to vegetable diet. In the fall of the year he is at his best; the ripe nuts and berries on which he fattens, and the wild honey of which he is inordinately fond, and which by his strong power of scent he readily finds in hollow trees, providing luxurious food.

In the winter he hibernates, and it is probably owing to the difficulty experienced by the hunter in finding the winter quarters, that the bear is not more regularly hunted.

The breeding season occurs in July, the young are born in February, two or three being produced at a time.

The flesh of the bear is palatable and freely eaten, and this not only by hunters. The carcass of the black bear forms one of the staple attractions of the butcher's stall at Christmas time, and commands a ready sale.

The fat of the bear is largely used as an article of commerce, and is generally manufactured into pomatum.

The fur is very valuable for robe purposes, and the demand for it is constantly on the increase.

When born the cubs are of a gray hue, and this colour they retain for the first year of their lives, after which the light hue gives place to the coat of glossy black. The coat is shed twice a year in spring and autumn.



THE BLACK BEAR (*Ursus Americanus*).



THE WOLF (*Canis Lupus Griseo-Albus*).

CANIS LUPUS GRISEO-ALBUS, (LINNÉ) (SABINE).

THE WOLF.

Specific Character.—The three first teeth in the upper jaw and the four in the lower jaw, are trenchant but small, and are called false molars. The great carnivorous tooth is bicuspid with a smaller tubercle on the inner side; that below has the posterior lobe altogether tubercular. There are two tuberculous teeth behind each of the great carnivorous teeth. The muzzle is elongate, tongue soft, ears erect, but in the domestic varieties sometimes *feridulous*. The forefeet are pentadactylous or five-toed, the hind feet are tetradactylous or four-toed. The teats are both inguinal and ventral.

Habitat.—North America, common in Northern Ontario.

Average Size.—Equal to a large setter dog.

Average Weight.—50 to 75 pounds.

Average Height.—At shoulder, 26 inches.

Average Length.—From tip of nose to point of tail, 5 feet; nose to tail, 48 inches; tail, 12 inches.

Value of Fur.—Per skin, average, 50c. to \$2.

The wolf is well known in Ontario, especially in its northern portions, and is cordially detested wherever found.

He is a noxious animal, the type of all detestable qualities, and courage is absolutely foreign to his nature. Unless accompanied by a pack of his cowardly fellows, the wolf will never attack an animal larger than himself, and he will flee like the wind before any cur that will take the trouble to chase him.

The gray wolf of Canada is about five feet six inches long from point of nose to tip of tail, and attains an average height of twenty-six inches at the shoulder.

In good condition he weighs about 100 pounds.

The eye of the wolf is of a greenish colour, which adds to his sinister and cunning appearance. His tail is well haired and bushy, but not so long as that of the fox.

The wolf subsists on any refuse he can pick up, and is generally to be found skirmishing on the outskirts of settlements or hunters' camps.

The female whelps in May, when four to eight pups are produced at a birth.

The wolf breeds freely with the dog, and in every Indian camp dogs are to be seen so peculiarly wolfish in aspect and characteristics, as to render them indistinguishable from their wild cousins.

The wolf is essentially the enemy of the deer, and the destruction wrought by him is great and merciless. On the glare ice the deer has no chance of escape from the pursuer, falling flat at every step, and being easily overtaken by the band of snapping cowards which pursue it. But the worst slaughter occurs when the snow is deep and covered by crust strong enough to support the wolf, but through which the deer falls step by step. Then it is that the deer yield up their lives in hundreds, and it is little wonder that with the wolf on one hand and the human assassin on the other, the noble species is disappearing fast.

On account of his cowardice and cunning, the wolf is hunted with difficulty, and only with poison can the wretch be effectually reached.

The work of the wolf hunter is arduous and dangerous, and, as at present, but small inducement is held out to him, comparatively few wolves are killed.

VULPUS FULVUS, (DESMAREST).

THE FOX.

Specific Character.—Reddish yellow; black behind, grizzled with grayish. Throat and narrow line on the belly, white. Ears behind and tips of caudal hairs (except terminal brush) black.

Habitat.—Arctic America to Northern United States.

Average Size.—Equal to a medium sized dog.

Average Weight.—15 pounds.

Average Height.—14 inches.

Average Length.—40 inches; nose to tail, 26 inches; tail, 14 inches.

Value of Fur.—Per skin, average 75c. to \$1.00.

The fox abounds in Ontario and is generally regarded as a downright nuisance.

To the farmer he is a pest, and as a destroyer of young game and game bird's eggs, he is almost without a peer.

The fox lives in a hole of his own making, and there the she-fox brings forth her young in April, generally three to five at a litter. The cubs live on the fat of the land if a hen roost is anywhere near at hand, for the mother is a successful poacher and evades the farmers' gun and traps right warily.

The skins are readily sold, and bring a fair price in the markets, but are all exported to Russia and Germany.

The fox is variable in the colour and marking of its fur; some specimens being of a pale yellow, some of a reddish fawn, and some blackish in tinting. In nearly every specimen there is a dark transverse strip over the shoulders, giving the animal the appellation of a cross fox.

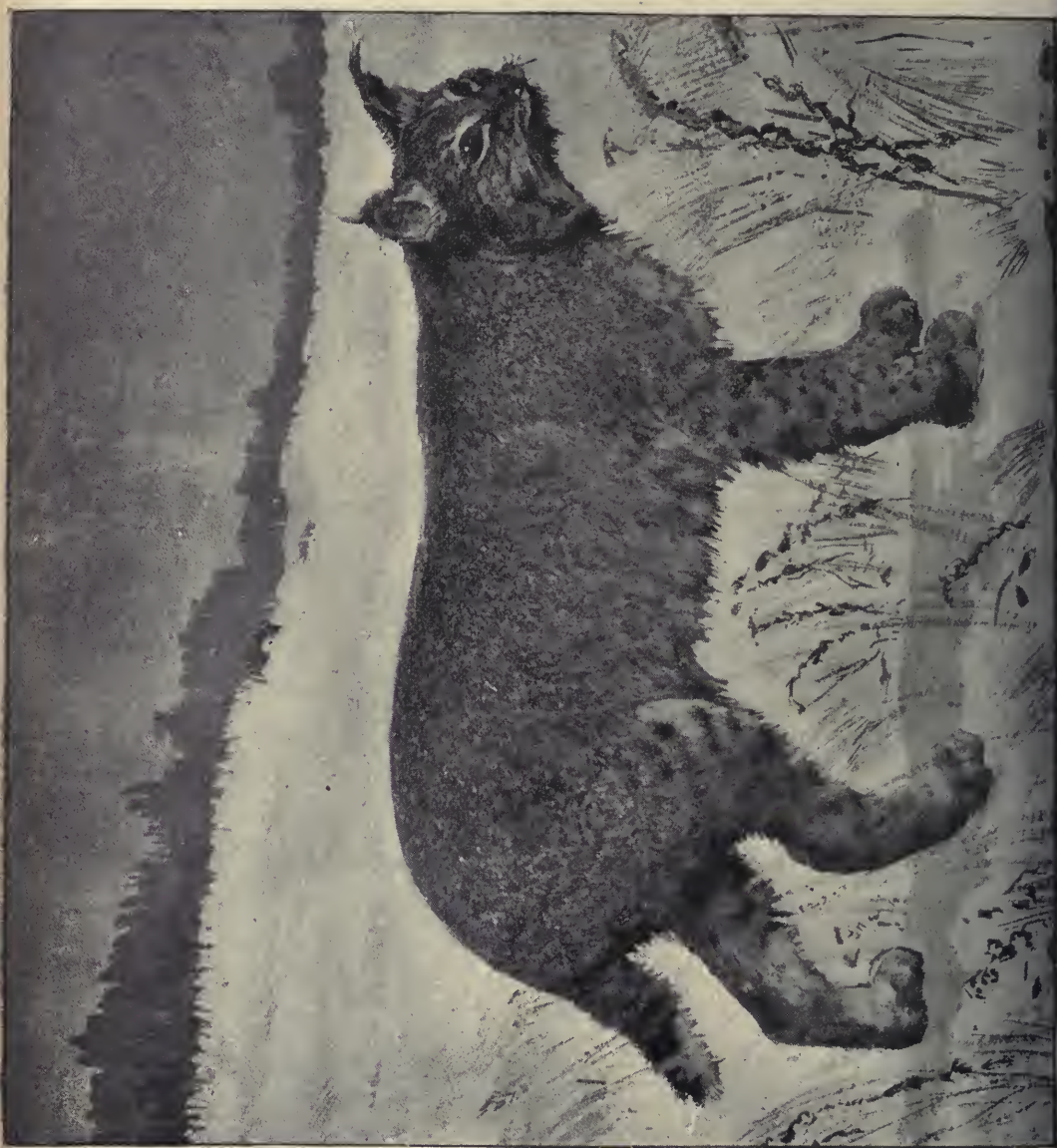
The hair is long, silky and soft. Tail very full and composed of an under fur, with long hair distributed uniformly among it, and having a white tip; feet and ears, black.

The fox is crafty to a degree and unless taken at a disadvantage, generally manages to elude its pursuers.

The skin has a peculiar and offensive odour, and for this reason few foxes are tamed, although they are easily domesticated.



THE FOX (*Vulpes Fulvus*).



LYNX BOREALIS CANADENSIS, (GRAY) (MIVART).

THE CANADA LYNX.

Specific Character.—Size, that of a setter dog. Tail as short or shorter than the head; its terminal fifth above and extreme end black all round. Feet very large, densely furred beneath in winter so as to conceal the pads. Hind feet about nine inches long, general colour grayish hoary, with concealed pale rufous, and waved with black, especially on the back. No distinct transverse band inside the legs; very obsolete dark markings on the head; ears with a narrow black margin on the convexity, and black pencil; grayish elsewhere. Whiskers chiefly white.

Habitat.—Northern North America, common in Ontario.

Average Size.—Equal to that of a setter dog.

Average Weight.—25 pounds.

Average Height.—2 feet.

Average Length.—3 feet, 4 inches; nose to tail, 35 inches; tail, 5 inches.

Value of Fur.—Per skin, average \$1.00 to \$2.00.

The Canadian lynx is the largest of the North American lynxes, and is distinguishable from the others not only on account of its size, but by the longer hair, larger feet and difference in colouration.

The animal is as large as a setter dog, although its weight is considerably less.

The head is broad, and the facial outline much arched. The neck is full and thick and has a pointed ruff at each side.

The legs are thick and the paws enormously large. The paws appear to be covered with thick hair, but on separating this, the naked pads are plainly visible.

The tail is very short and densely hairy.

The ears are angular and tipped with a pencil of very long hair.

The limbs of the lynx are very powerful and the general colour is gray.

In spite of the ferocious appearance of this animal, it is timid and never seeks an encounter.

The lynx breeds but once a year, the female producing two or three young ones, late in May or June.

The flesh is said to be edible, but quite devoid of flavour.

The fur is not very valuable, and the lynx is so scarce that it is seldom hunted unless when a trapper happens to stumble across a specimen; then of course a shot is irresistible, but woe to the venturesome hunter who gets within reach of the claws of the wounded and maddened wild cat.

The lynx feeds chiefly upon smaller animals such as hares, but it devours lambs, young pigs and other domestic animals at every opportunity, and is much feared and detested on this account by the farmer.

LUTRA CANADENSIS, (TURTON).

THE OTTER.

Specific Character.—Length about $4\frac{1}{2}$ feet. Muzzle longer than wide, sending down a naked point along the median line of the upper lip anteriorly. Under surfaces of the feet so covered with hair towards the circumference as completely to isolate the naked pads of the tips.

A hairy strip extending forward from beneath the carpus on the palm. Colour above, liver brown, barely lighter beneath interior surface and sides of head, and neck dirty whitish.

Habitat.—North America generally, common in Northern Ontario.

Average Size.—Equal to that of an enormous cat, although much longer in body.

Average Weight.—From 25 to 40 pounds.

Average Height.—10 inches.

Average Length.— $3\frac{1}{2}$ to 4 feet.

Value of Fur.—Per skin, average \$4 to \$8.

The general form of the otter is musteline.

The head is broad and blunt, the neck long, the body depressed and low, legs short, tail long, tapering and much depressed about three-fifths as long as the head and body.

The feet are broad and webbed to a point opposite to the root of the claws in the fore feet. The palms are entirely hairy, except the central portions which are naked. The characteristics of the hind feet are much like those of the fore feet.

The fur is of a soft brown colour; the under fur is, however, decidedly lighter.

The habits of the otter are decidedly aquatic and its movements in the water are marvellous.

It is a great destroyer of fish, and is so dainty in the matter of food that it will eat only the choicest parts of the fish it kills, leaving the remainder to rot on the river bank.

The nest of the otter is found in hollows under the banks of the river, but the animal never burrows, its claws being too weak for any such purpose.

The fur of the otter is very valuable, and for this reason it is hunted incessantly, so much so, that as far as Ontario is concerned the animal is almost extinct.

The breeding season occurs in March and the young are born in April, from three to five being produced at a time.



THE OTTER (*Lutra Canadensis*).



THE BEAVER (*Castor Canadensis*)

CASTOR CANADENSIS, (KUHL).

THE BEAVER.

Specific Character.—The head is large and broad, the muzzle is naked, the hinder border, or line of separation from the hairs of the forehead, is slightly concave anteriorly, and falls considerably behind the nostrils, and the space all round the nostrils is naked. The nostrils are lateral and widely open, upper lip acutely emarginated. The hairs of the lips extend a short distance on their inner surface. Tongue very large and fleshy, eyes excessively small. Ears moderately developed, densely covered with hair on both surfaces, the hairs extending even into the meatus.

The limbs are large and stout, the under surface of all the feet entirely naked, the upper surfaces being coated with stiff silky hairs. The hand has five distinct fingers, each with well developed claws; there are only two tubercles on the palm, both large and placed side by side, the exterior twice as large as the interior and extending further back.

The hind feet are very large and turtle like, all the toes being connected by a thick web. When fully extended the foot appears nearly twice as broad as long. Under the claw of the second toe, is a second claw.

The tail is as long as the body, without the head. It is so thick for more than one-third from the base, that its commencement can scarcely be made out, for this distance it is conical and densely coated with hair, when it suddenly becomes very flat and much depressed, and the shape resembling that of a mammal's tongue. This portion is entirely covered with transversely elongated subhexagonal scales.

Habitat.—North America generally, Hudson's Bay to Mexico. Still found in Northern Ontario but in greatly diminished numbers.

Average Size.—Equal to that of a large raccoon.

Average Weight.—From 15 to 25 pounds.

Average Height.—10 inches.

Average Length.—About 3 feet.

Value of Fur.—Per skin, average \$5 to \$12.

The beaver is one of the most valuable fur-bearing animals found in Canada, and is the national emblem of England's grandest colony.

It is possessed of marvellous instinct and is altogether a most wonderful animal.

The beaver live in societies or colonies and unite in the formation of works, which equal the work of engineers.

Their habitations are by clear rivers and creeks or large springs, although they are often found on the banks of lakes. In order that their supply of water may be sufficiently deep at all times, to suit their requirements, the beaver build dams to raise the water to the desired level.

These dams are made of mud, tree branches and stones, and these although only about two feet wide at the top are about twelve feet in thickness at the bottom. The skill with which these dams are constructed is marvellous, and especially where different parts of the stream run with varying swiftness, the

formation is a triumph of engineering skill. Wherever the stream is gentle, the dam is built straight across it, and where the current is swift, the dam is curved, so as to present a convex surface to its face.

Before using the logs for the construction of their dams the beaver invariably remove all the bark, which is carried away and laid up as a winter store for food.

Near the dams are built the "lodges" or houses, and these are made of moss, leaves, branches and mud. The lodges are circular and about three feet in height and seven feet in diameter. The walls are of extraordinary thickness and the roofs are finished off with thick layers of mud, which are renewed every year.

Round the lodges a ditch is excavated too deep to be entirely frozen, and into this the lodges open, allowing the beaver to pass out and in at will.

The teeth of the beaver are singularly sharp and the jaws more than ordinarily strong. An odoriferous substance called "Castoreum" is secreted in two glandular sacs near the root of the tail, and gives out a powerful odour. This "Castoreum" possesses a strange attraction for the beaver and if scented will cause the animal to sit up and squeal with excitement. The trapper knowing this, usually baits his trap with a twig dipped in the pungent substance, and if the beaver once smells it, his capture becomes more than probable.

The fur is of a uniform reddish brown and is very valuable, ranking ahead of almost any other fur found in Canada.

The young are born in June, and four to six are produced at a litter, being born with their eyes open.

The flesh of the beaver is good and readily eaten by hunters, the tail being considered a great delicacy. The beaver has like all other valuable wild animals, been mercilessly slaughtered in Canada and there is grave danger that the species may soon become extinct.



THE FISHER, BLACK CAT, PEKAN OR PENNANTS MARTEN (*Mustela Pennanti*).

MUSTELA PENNANTI, (ERXLEBEN).

THE FISHER, BLACK CAT, PEKAN, OR PENNANTS MARTEN.

Specific Character.—Legs, belly, tail, and hinder part of back, black; the back with an increasing proportion of grayish white to the head. Length over two feet. Vertebrae of tail exceeding twelve inches.

Habitat.—Eastern and Central and Pacific regions northward to the Arctic circle.

Average Size.—Equal to a fox about two-thirds grown.

Average Weight.—10 to 15 pounds.

Average Height.—9 inches.

Average Length.—2½ feet.

Value of Fur.—Per skin, average \$2 to \$5.

The general appearance of this animal is more fox-like than musteline in the long head, bushy tail, and large size.

The muzzle is quite large, the ears low but very wide, and the eyes very large. The feet are short and stout, and well armed with strong claws; there is a naked ball under the end of each of the five toes, and another V shaped one on the palm and soles. The tail is long, rather shorter than the body without head and neck, thick and bushy at the base, and tapering uniformly to an acute tip.

The fur is valuable and is much in demand.

The fisher is a ready climber and is very partial to water. Its food consists chiefly of mice and other small animals, and it is said not unfrequently to kill fish.

Its habits are destructive, and for this reason, although it is supposed to be easily tamed, it never becomes really domestic.

The young are born in June, the female generally producing three or four at a birth.

MUSTELA AMERICANA, (TURTON).

THE SABLE OR MARTEN.

Specific Character.—Legs and tail blackish. General color reddish yellow, clouded with black; above becoming lighter towards the head, which is sometimes white. A broad yellowish patch on the throat, widening below so as to touch the legs. Central line of belly sometimes yellowish. Tail vertebræ, about one-third the head and body. Outstretched hind feet reach about to middle of the tail, with the hairs. Feet densely furred.

The body is stouter than that of the ermine or weasel. Head somewhat depressed, acute, and broader than might be looked for, with so lengthened a skull.

The ears are large and thickened, both sides densely coated with short velvety hairs, overlaid by stiff longer ones, which do not extend to the margins of the ears. The tail is nearly two-thirds the length of head and body. The legs are short and robust, the feet densely coated with fur. The balls of the toes are naked and the claws distinctly visible, though inserted among stiff hairs as long as themselves.

The fur is very full and soft, with many long coarse hairs interspersed. It is difficult to give an accurate idea of the colour, owing to the variation in different parts of the body.

On the upper parts and sides generally, the hair is of a rusty red colour, which is gradually merged into a brownish ash, becoming still lighter and lighter, until the tints about the head are very pale, sometimes almost white.

Habitat.—New England eastward to the Pacific coast, northward to the Arctic coast, including Ontario.

Average Size.—Equal to that of a very large ferret.

Average Weight.—4 pounds.

Average Height.—6 inches.

Average Length.—21 inches; nose to tail, 16 inches; tail, 5 inches.

Value of Fur.—Per skin, average \$1 to \$1.50.

The body of the sable is stouter than that of the weasel.

The head is somewhat depressed, acute, and broader than might be looked for.

The ears are large and thick, and densely coated with short velvety hairs overlaid by stiff longer ones which extend to the margin of the ears.

The tail is nearly two-thirds the length of the head and body, the legs are short and robust, the feet densely covered with hair, the balls of the toes naked, and the claws distinctly visible although inserted among stiff hairs as long as themselves.

The prevailing tint of the tail is a lustrous black. The margins and external surfaces of the ears are nearly white.

The sable take up their abode near the banks of rivers, and their homes are generally burrowed in the earth, although they are occasionally found in the hollows of trees.

The food used is partly vegetable and partly of an animal nature.

The fur is very valuable and much sought after, but as the sable is a cautious animal it is not easily caught and the skin supply is not large.

The sable is not a prolific animal, the female producing as a rule only three or four at a birth in June.



THE SABLE OR MARTEN (*Mustela Americana*).



THE MINK (*Putorius Vison*).

PUTORIUS VISON, (GAPPER).

THE MINK.

Specific Character.—Tail about half as long as the body. General colour rather dark brownish chestnut. Tail nearly black. End of chin white, but not the edge of the upper jaw.

Habitat.—All North America, very common in Ontario.

Average Size.—Equal to that of a very large ferret.

Average Weight.—2 pounds.

Average Height.—5 inches.

Average Length.—15 inches.

Value of Skin.—Average, 50c. to \$2.

The mink is fairly plentiful in Ontario, and being much in demand for its skin which is valuable, is hunted eagerly by the trapper.

The fur is usually brown with a little white along the jaws, but there is considerable variation in the tinting. Some specimens are of a much paler colour, and on others the fur is almost black.

The mink frequents the banks of ponds and rivers, and its food consists of fish, frogs, and insects.

The shape of the body is not unlike that of the otter, but the teeth more closely resemble those of the pole-cat.

The feet are slightly webbed and well adapted for swimming.

The scent glands are well developed, and the odour emitted from them is scarcely less unpleasant than that of the skunk.

The mink can be successfully tamed and is easily reared.

The female produces her young in the month of June, four generally being born at a time.

GULO LUSCUS, (LINNÉ) (SABINE).

THE WOLVERINE.

Specific Character.—Generally dark brown in colour. Tail, except at base, legs, and beneath, black. A lighter broad band on flanks, passing over the base of the tail and rump. A grizzled light patch along the temples. The head is somewhat pointed and closely resembles in shape that of the bear. The ears are very small and nearly concealed in the fur, longer than high, and well coated on both sides with hair. The eyes are very small, scarcely exceeding those of a rabbit.

Habitat.—Northern half of the United States to the Arctic Ocean.

Average Size.—Equal to that of a medium sized dog, but in shape more closely resembling a cat.

Average Weight.—Not obtainable.

Average Height.—Not obtainable.

Average Length.—42 inches; nose to tail 35 inches, tail 9 inches.

Value of Fur.—Per skin, average \$4.00.

As will be seen from the measurements and description of this animal, the wolverine is like a small bear with shaggy fur, although it is closely allied to the martens and weasels in general structure. Its feet are large and powerful, and armed with large, sharp, curved claws. The front ones the largest. The most prominent colour is purplish brown. The tail, except at its base, the limbs and under parts generally nearly black. The flanks commencing behind the axilla and passing backwards over the base of the tail, are of a pale tint of chestnut brown. There is a grizzled patch of mixed hoary and chestnut hairs passing from the central line of the forehead above the eyes, along the temples, and a little obliquely to the ears. There is a tuft of white hairs on each side of the neck and another between the legs. The wolverine is identical with the glutton of Europe. It is known sometimes in the United States as the Carcajou. This animal has the credit of being very cunning and very ferocious. It is said to lie in waiting on the limb of a tree overhanging a "runway" and when the unsuspecting deer passes under, manages to drop upon its back, and generally succeeds in bringing it to earth.

It is hated by hunters and trappers for its propensity to follow their lines of traps and devour either the bait, or captured animals.

The wolverine is exceedingly scarce, if found at all in southern Ontario, but probably exists in its northern townships.



THE WOLVERINE (*Gulo luscus*.)



THE SKUNK (*Mephitis Mephitis*).

MEPHITIS MEPHITICA, (BAIRD).

THE SKUNK.

Specific Character.—Soles naked, except on the posterior third. Tail vertebræ half the length of head and body, with hairs considerably less. Colour black; a narrow frontal line; a broad triangular nuchal patch, continuous, with a narrow line on either side of the back, nearly to the tail, and a tuft on the end of the tail, white. The dorsal stripes sometimes broader; sometimes wanting as also the nuchal patch.

Habitat.—Hudson's Bay to Guatemala, very common in Ontario.

Average Size.—Equal to that of a large cat.

Average Weight.—8 pounds.

Average Height.—7 inches.

Average Length.—2 feet; nose to tail 15 inches; tail 9 inches.

Value of Fur.—Per skin, average 25c. to \$1.50.

This beautiful but malodorous animal is about the size of a large cat, bulkier in body but not so long. The general colour is brownish black, with white longitudinal stripes on each side of the back as well as on the head. Some specimens are without the white stripes and have only a nuchal patch of white.

The tail is long and bushy, white on the under at the root of the hairs, and black on the upper surface.

The feet have five toes, those on the fore feet being armed with strong curved claws which are used with great effect in burrowing.

The skunk is a slow moving animal, and unless when suddenly disturbed, never attempts to hurry itself.

In its anal glands is secreted a yellowish, transparent fluid, which in odour is intolerably offensive. When angry, or acting on the defensive, the skunk ejects this fluid to a distance of two or three yards in the form of a spray, and so penetrating is this horrid fluid, that a brisk wind will carry it a hundred yards away, to scatter consternation amongst men and beasts. None but those who have smelled the discharge at close quarters can form any idea of its awful strength and sickening odour.

The skunk is cleanly in habit and a distinctly nocturnal animal. It is carnivorously inclined and never loses an opportunity of burglarizing the poultry yard if one is near at hand,

Being gregarious, numbers of these animals are to be found together in their dens, where, during the winter, they hibernate.

The bite of the skunk is said to produce hydrophobia in a form absolutely indistinguishable from that produced by the bite of a mad dog.

Its fur is valuable and much in demand, being used principally for trimmings.

The young are born in June or July and from four to ten are produced at a time.

PROCYON LOTOR, (LINNÉ) (STORR.)

THE RACCOON.

Specific Character.—General colour, grayish white, the tips of the long hairs black, and imparting this colour to the back. Under fur, dark brown. A large oblique black patch on the cheek, continuous, with a paler one beneath the jaw, another behind the ear. End of muzzle, except the upper line, together with the posterior of the cheek patch, whitish. Tail not tapering, with the tip and five annuli black; these as broad as the rusty white interspaces. Hind feet not exceeding four inches; above dirty whitish. Fore feet not exceeding two and three quarter inches. Varies in being nearly black, with the markings obscured; sometimes more or less yellowish or white, with absolute markings or none. A decided tendency to albinism.

Habitat.—United States and Central America, also throughout Ontario.

Average Size.—Equal to that of a large cat.

Average Weight.—15 to 20 pounds.

Average Height.—9 inches.

Average Length.—32 inches; nose to tail, 22 inches; tail, 10 inches.

Average Value of Fur.—per skin, average 25c., to \$1.

The usual colour of the raccoon is light gray, tinged with pale rust across the shoulders and much overlaid with black tipped hairs.

The tail has five distinct black rings with a tip of the same colour; the intervals between the rings are grayish white.

There is a dusky streak along the back which is lost in the crown, and which separates the dark spectacle-like patches which encircle the eyes.

The length of the raccoon is about three feet, of which the tail occupies about one third

There is a diversity of opinion as to the merits of the raccoon as an article of food, but the flesh is eaten by many and declared delicious.

The raccoon is very fond of water, drinking large quantities and immersing its food so as to moisten it, before eating. The food is grasped in both hands after the fashion of the monkey, and shaken backwards and forwards in the water until soft. From this habit the raccoon derives its specific name "Lotor" the Washer, and its German appellation of the "Washing bear."

The racoon is omnivorous, and feeds heartily on meat, fruit, and insects; it is particularly partial to the eggs and meat often found in the farmer's larder.

It is easily tamed, but is subject to outbursts of ill-temper and can never be trusted, even when domesticated.

The abode of the raccoon is generally in a hollow tree, and being sure of foot he climbs readily when pursued, into the highest branches.

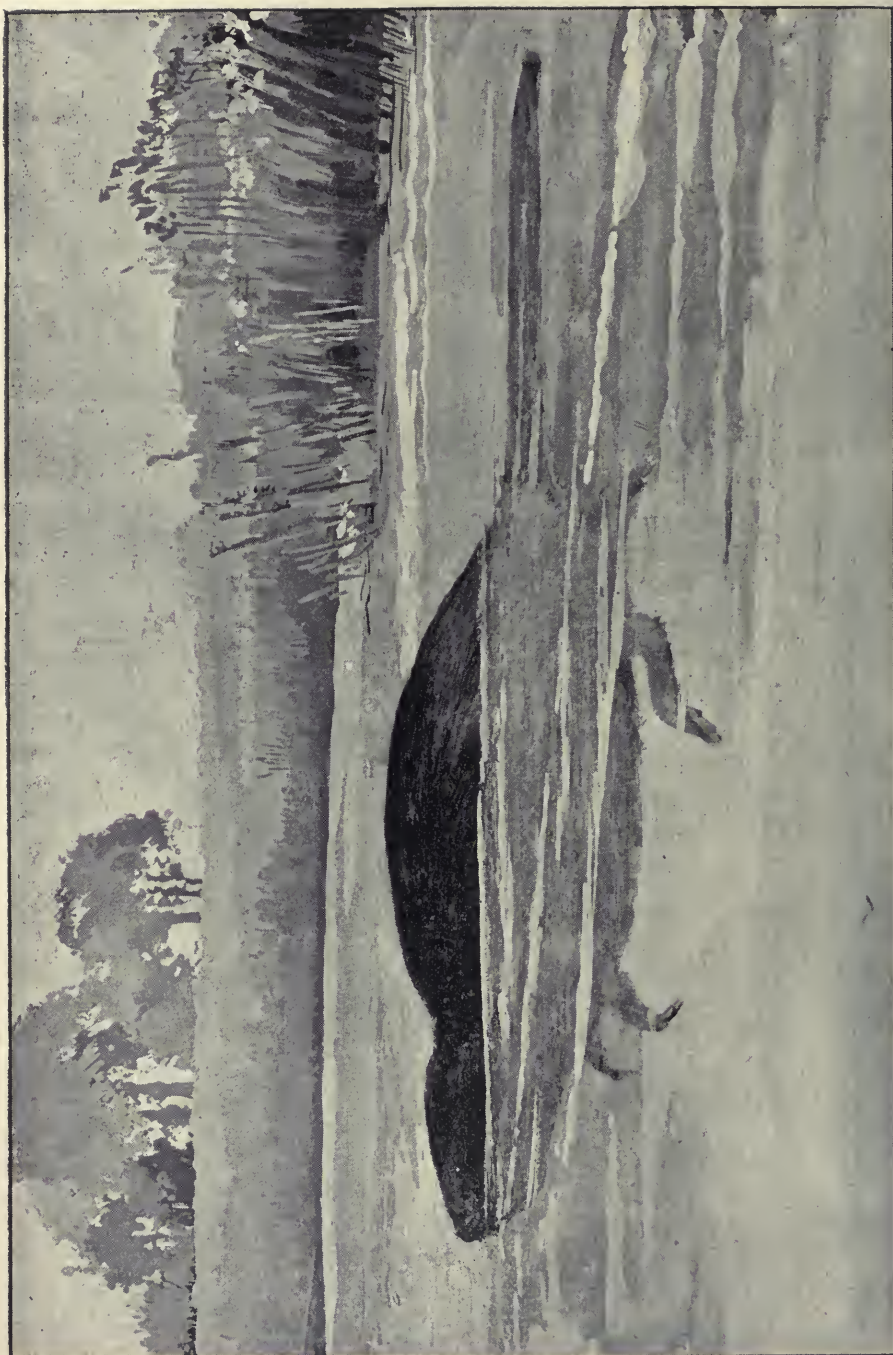
The female produces from four to eight young ones at a birth.

The little animal is cunning in its evasion of traps or snares, and generally dies from a gunshot, or gives up his life to the dogs which accompany the coon hunters on their nocturnal jaunts.

The skin is valued as a fur and is much used for trimmings.



THE RACCOON (*Procyon Lotor*).



THE MUSKRAT (*Fiber zibethicus*).

FIBER ZIBETHICUS, (LINNÉ) (CUVIER.)

THE MUSKRAT.

Specific Character.—Form somewhat arvicoline, except the tail, which is long, much compressed vertically, with scant hair; hind feet partly webbed; fore feet with stiff bristles. Teeth arvicoline, the posterior lower molar composed of four or perhaps five prisms, the re-entrant angles alternating (if four, the anterior with a re-entering angle.)

Habitat.—North America, common in Ontario.

Size—Equal to that of a small rabbit.

Average Weight.—3 to 4 pounds.

Average Height.—4 to 5 inches.

Average Length.—About 12 inches.

Value of Fur.—Per skin, average 10c. to 25c.

The muskrat is common in Ontario.

In colour it is dark brown on the upper portions of the body, tinged with a reddish hue on the neck, ribs, and legs; and the belly is ashy gray.

The teeth are bright yellow, and the nails are white.

The hind feet are webbed, and their imprint in the mud resembles that of a duck.

The fur is used largely and the flesh is palatable, so that the muskrat is hunted vigorously.

The animal derives its name from the musky odour diffused by the secretion of a large gland situated in the anal region.

The muskrats bear twice during the season, the female producing litters of from three to six in the months of May and July.

The food of the muskrat is almost entirely vegetable.

The animal lives mostly in burrows, and when near marshy ground the houses run up about three feet above the water and resemble miniature hay-cocks. The couch inside is luxurious, being made of lily leaves, sedge, and other plants.

The fur is largely used for trimmings but is not considered valuable.

 PUTORIUS ERMINEA, (LINNÉ).

THE STOAT OR ERMINE.

Specific Character.—Length to tail, 9 inches or less. Tail vertebræ about half this length. Black of tail nearly one-half to one-third its length. Outstretched hind feet reach to the middle of the tail, (with hairs) or a little beyond. Colour in summer, dark chestnut, brown above; whitish beneath. Whole upper jaw brown. In winter, white. Tail with black tip.

Habitat.—United States with some exceptions northward to the Arctic coast.

Size.—Equal to that of a small ferret.

Average Weight.— $1\frac{1}{2}$ pounds.

Average Height.—3 to 4 inches.

Average Length.—14 inches.

Value of Fur.—Per skin, average 40c.

It is not generally known, but it is nevertheless a fact that the beautiful ermine fur so much sought after is supplied by the vicious and much detested stoat.

In summer time this animal's fur resembles that of the weasel, except that the dark parts are not so ruddy, nor the light portions of so pure a white as in that animal.

During the winter months the fur whitens, partaking of a delicate cream yellow colour, and this applies to the entire body except the tip of the tail which retains its original dark colour.

The stoat is larger than the weasel, measuring over fourteen inches, of which the tail occupies about four inches.

The stoat is a determined hunter, and being swift of foot generally manages to run down its prey.

The hare, rabbit, and game bird, and the eggs and young of other birds form its principal food. Of eggs it is extremely fond, and as it climbs with agility, it often gets a meal from the nests found high up in the trees.

The nest of the stoat is cunningly contrived and is always well stocked with provisions.

The breeding season occurs in the month of April, and the young are born in June, three or four being produced at a birth.

Like the weasel, the stoat is possessed of a powerful highly unpleasant odour, and for this reason, although it can be successfully tamed, it makes but an indifferent pet.



THE STOAT OR ERMINE (*Putorius Erminea*).



THE WEASEL (*Putorius Vulgaris*).

PUTORIUS VULGARIS, (LINNÉ).

THE WEASEL.

Specific Character.—Smallest of American weasels. Length about six inches to root of tail. Tail vertebræ one-fifth to one-sixth the head and body. The terminal hairs about one-third the vertebræ, which do not exceed two inches. Tail, slender, not tufted at the tip. Above, almost liver brown; beneath, white. No distinct black tip to the tail, though this is sometimes darkest.

Habitat.—Northern United States northward, common in Ontario.

Average Size.—Equal to that of a rat.

Average Weight.—1 pound.

Average Height.—3 inches.

Average Length.—14 inches.

Value of Fur.—Per skin, average 10c.

The weasel is well known in Ontario, and is in spite of its small size, a most savage and relentless destroyer of smaller animals.

The colour of the fur is of a deep reddish brown on the upper parts of the body, whilst the under portions of it are of a pure white.

The tail is uniform in tint with the body, and is not furnished with the tuft of jetty hair that is so conspicuous in the stoat.

The legs are extremely short in proportion to the body, and the neck is so long that the head is carried far out, making the fore legs appear as if placed behind instead of in front of the chest.

When alarmed the weasel diffuses a powerful and foetid stench, which although not as strong as the odour emitted by the skunk, is distinct and disgusting.

The weasel is lithe and quick in movement, and being of a destructive nature is continually employed in killing its victims. Its attack is almost invariably directed at the head of its prey, and one quick sharp bite generally suffices to pierce the brain and cause instant death. Rats, mice, rabbits and young birds all fall before it. It is said that the weasel is a destroyer of the hare, but as the stoat is often called and mistaken for the weasel, it is probable that many of the deeds attributed to the weasel are in reality those of the stoat.

The nest of the weasel is generally found in the cover afforded by a hollow tree, and is made of mosses and dry leaves.

Four or five young are born at a time, and two or three litters are produced each year.

The fur is almost valueless.

ERETHIZON DORSATUS, (LINNÉ) (ALLEN).

THE CANADA PORCUPINE.

Specific Character.—Fur, dark brown; the long projecting bristly hairs dusky, with white tips; spines white, the points dusky. Nasal bones not more than one-third the length of the upper surface of the skull.

Habitat.—New England and Ohio, northwestward. Common in northern Ontario.

Average Size—Equal to that of the beaver or a half-grown dog.

Average Weight.—15 to 20 pounds.

Average Height.—10 inches.

Average Length.—From tip of nose to end of tail about $2\frac{1}{2}$ feet.

Skin valueless.

The porcupine is of a size about equal to that of the beaver.

The muffle is entirely hairy, the fore feet have only four fingers, without any rudiment of a thumb, and all the claws are long and of nearly equal length.

The tail is short, very thick, and much depressed.

The porcupine is covered on the upper parts and sides with a dense growth of short spines, which become thinner and thinner nearer the lower parts of the sides where they pass into coarse bristly hairs.

The under fur is soft and of a dark brown colour, very nearly black.

The limbs are brownish where not covered with spines.

The spines are yellowish on the back, whitish on the sides, and tipped with brown.

The porcupine spends most of its time in the trees, it moves but slowly on the ground, but its armour of spines affords it ample protection against all enemies.

It lives chiefly on bark which it strips from the trees as cleanly as if with a knife. When it commences its meal it ascends the tree and commences with the highest branches making its way downward to the foot.

The Porcupine is a quiet animal and easily alarmed.

The teeth are of a bright orange colour.

The nest is made in the hollow of trees or in crevices amongst the rocks.

The young are born in April or May, usually one but occasionally two at a time.



THE CANADA PORCUPINE (*Erethizon dorsatus*.)



THE GROUND HOG OR WOODCHUCK (*Areolomys Monax*).

ARCTOMYS MONAX (LINNÉ) (SCHREBER).

THE GROUND HOG OR WOOD CHUCK.

Specific Character.—Tail, with the hairs, about half as long as the body and head, or a little less. Colour varying from nearly pure black all over, to grizzled above, and bright chestnut red beneath. Feet always black, or dark brown. Tail usually black, sometimes annulated grayish. Length 15 to 18 inches. Hind foot over three inches.

Habitat.—Eastern region of the United States and northward through Ontario.

Average Size.—Equal to that of a cat with short legs.

Average Weight.—8 pounds.

Average Height.—6 to 8 inches.

Average Length.—17 inches; nose to tail, 13 inches; tail, 4 inches.

Value of Fur.—Valueless.

The Ground Hog is common all over Ontario. In form it is thick and clumsy, the neck being short and the head set apparently on the shoulders. The head is broad and flat, legs short and thick, tail short, full, and bushy, and somewhat flat.

There is a shallow cavity between the jaw and cheek about half an inch in depth which takes the place of an internal pouch.

The whiskers are in five horizontal series on each side. There are about five large hairs in each series, all however are short and do not extend back to the ear.

Another set of whiskers (four hairs in the set) is seen above the anterior canthus of each eye, extending obliquely upwards and backwards.

On each cheek again, and about as distant from the eye and ear as these are from each other, is a clump of long hairs about five or six in number.

There is also a tuft of bristles under the chin, as well as some scattered shorter ones in advance of these and near the edge of the lip.

The eyes are small and the ears very short.

The feet are large, the palms and soles being entirely naked. The thumb of the hand or forefoot is rudimentary, being little more than a wart, and but for the broad short nail with its underlying pad would be scarcely appreciable.

The predominant colour of the outer surface of the hair is black, but on the shoulders, neck, cheeks, and the whole under parts, there is a distinctive grayish white, and there is a distinct whitish ring round the muzzle.

The ground hog is of no value as a fur bearing animal.

It lives in burrows and passes the winter in a state of torpidity. Its food consists of grass, clover, and grain.

The female produces two or three young at a birth, in the month of June.

LEPUS AMERICANUS, (ERXLEBEN).

THE NORTHERN HARE, WHITE RABBIT.

Specific Character.—Larger than the common gray rabbit. Ears about the length of the head. Hind foot much longer. Tail short. Colour, in summer, very similar to that of the European hare; rich reddish or cinnamon brown above; tail sooty brown above, dull grayish beneath; body beneath white; ears black at the tip of the dorsal surface, this extending down the margins; the fringe and posterior edge white. In winter, white, though usually showing a good deal of yellowish brown beneath the tip of the long hairs; the under fur plumbeous from the roots of the basal half, then brownish red.

Ears white, except the external band.

Habitat.—New England and middle States northward throughout Ontario.

Average Size.—Equal to that of a cat.

Average Weight.—4 pounds.

Average Height.—8 inches.

Average Length.—18 inches; nose to tail, 16 inches; tail, 2 inches.

Value of Fur.—Valueless.

The rabbit proper is unknown in Canada, but hares are plentiful, the latter being ignorantly called rabbits by those who do not know the difference.

The hare never burrows like the rabbit, and its nest for the most part is on the ground or beneath some brush heap or other convenient cover.

The hare is distinctive in character having a double set of upper teeth. It has five toes before, and four behind.

The ears are very long, the tail very short; the hind feet much longer than the fore-feet, and the shoulder blades are always imperfect.

The fur is brown in summer, but changes to white at the approach of winter.

The hare breeds twice during the season, the female producing her young in June and August, the litter averaging from five to eight at a birth.

The fur is valueless in the Canadian fur market, as skins can be bought cheaper in Europe than they can be had here.



THE NORTHERN HARE, WHITE RABBIT (*Lepus Americanus*).



THE WOOD HARE, GRAY RABBIT, COTTON TAIL (*Lepus Sylvaticus*).

LEPUS SYLVATICUS, (BACHMAN) (ALLEN).

THE WOOD HARE, GRAY RABBIT, COTTON TAIL.

Specific Character.—Hind leg from heel, longer than the head by the length of the claws. Ears about two-thirds of the length of the head. Fur full and moderately soft. Pads of the feet full. Back light yellowish brown, banded and lined with black; this colour extending along the anterior edge of thighs. Side much grayer; across the rump clear ash, gray and black. Nape, fore-legs, and outside of hind legs yellowish rusty, anterior face of the latter whitish, throat yellowish gray. Lower parts pure white. Tail above, like the back, beneath pure cottony white. Ears with the posterior edge whitish; the edges of the dorsal surface towards the tip black, the other portion except the external band, ashy brown. Concavity of ear whitish. Fur everywhere at the base lead colour, except under the tail. Among the largest of the short-eared rabbits of North America. Ears considerably shorter than the head; measured from the base of the cartilage, of equal length.

Habitat.—United States generally, and the southern counties of Ontario.

Average Size.—Equal to that of a small cat.

Average Weight.—3 pounds.

Average Height.—6 inches.

Average Length.— $13\frac{1}{2}$ inches; nose to tail, 12 inches; tail, $1\frac{1}{2}$ inch.

Value of Fur.—Valueless.

This representative of the Leporidæ is exceedingly common throughout the southern part of Ontario and is generally called a rabbit, on account of its resemblance to the English rabbit. It is not, however, like it anatomically nor in its habits, in the latter of which there is a wide difference. Hares do not live in burrows as rabbits do, but lie in form in some bush or thicket; a hollow stump or log or under a log heap serving for a nest, although a common place is a shallow hole dug in the ground in a hay or grain field. This is lined with grasses, then with fur, and the young are there nursed until ready to shift for themselves. When born they are covered with hair and have their eyes open. Rabbits are born naked and have their eyes closed for a number of days. Hares only bring forth a litter of from three to five leverets in the months of May and July, while rabbits bear from five to eight.

The rabbit always burrows, and lives in its burrow during the night, feeding by day. The hare, on the contrary, feeds principally after sunset and during the night. This hare does not turn white in winter as does the Northern hare.

It is a destructive little animal, very injurious to fruit trees on account of its habit of eating bark. It is considered good eating and is generally shot by the sportsman when other game is scarce.

It is only within the last twenty or twenty-five years that it has been known in Ontario, migrating from the United States, crossing the Niagara River possibly some fine moonlight night over the Suspension Bridge.

SCIUROPTERUS VOLUCELLA, VOLUCELLA, (PALLAS) (ALLEN).

THE FLYING SQUIRREL.

Specific Character.—Tail with hairs, nearly as long as the head and body. Above light yellowish brown, the tail similarly coloured or with a more smoke-coloured tinge. Beneath creamy white, the hairs white to the roots; under surface of the tail more reddish. Length of head and body about five inches; of tail with hairs half an inch less; hind feet one and a quarter inch.

Habitat.—United States except the northwestern portion, Mexico and Guatemala, and throughout Ontario.

Average Size.—Equal to that of a half grown rat.

Average Weight.—6 ounces.

Average Height.— $2\frac{1}{2}$ inches.

Average Length.—9 inches; $5\frac{1}{2}$ inches from nose to tail; tail, $3\frac{1}{2}$ inches.

Value of Fur.—Valueless.

The peculiarity of this beautiful little animal is the flap-like web extending along its sides between the fore and hind legs. This provision enables the animal, when it jumps from tree to tree or from one limb to another to sail as it were in a downward direction. Its fur is delicately soft. It is a harmless little creature, feeding at night principally upon buds, nuts, roots etc. It builds for itself a nest, composed of moss, high up in a small sapling in some dry swampy place.

The nest often reaches the size of a large pail, and is always provided with two or more openings or escape holes, and it is here the squirrel raises its young, although they are often also found in hollow stubs of trees.

This squirrel is gregarious, often during the winter as many as eight or ten being found in one hole.

Owls, hawks, and weasels are its chief enemies.

The young are born in May, generally four at a time.



THE FLYING SQUIRREL (*Sciuropterus Volucella*, *Volucella*).



THE RED SQUIRREL OR CHICKAREE (*Sciurus Hudsonius*, *Hudsonius*).

SCIURUS HUDSONIUS HUDSONIUS, (PALLAS) (ALLEN).

THE RED SQUIRREL OR CHICKAREE.

Specific Character.—Body seven or eight inches long, longer than the tail. Ears moderately broad, coated with long hairs springing from the back and projecting behind in a tuft. Tail narrow, flat. Hind feet densely hairy to the tubercles at the base of the toes, the under surface of which are themselves somewhat coated; in summer somewhat naked. Above and on the sides, mixed black and grayish rusty, a broad dash of bright ferruginous down the back and upper surface of the tail. Lower surfaces of the body dull white; hairs not annulated except in very northern specimens. Tail rusty on the margin within which is a narrow band of black, both colours greater in extent at its end. Hairs above uniform ferruginous, not annulated, beneath annulated like the sides.

Habitat.—Throughout Ontario and the northern states.

Average Size.—Equal to that of a rat.

Average Weight.—8 ounces.

Average Height.—3 inches.

Average Length—12 inches; nose to tail, 7 inches; tail, 5 inches.

Value of Fur.—Valueless.

This lively little squirrel is very common throughout Ontario, but except to the boy sportsman it is not of much importance.

It feeds upon nuts, and the seeds and buds of trees, and is very fond of the seeds of the hemlock taken from its cones. Its nest is usually placed in a hole in a tree, where it stores up a winter supply of food, although unlike most of the other squirrels, it may be seen foraging during the coldest day in winter. It is very destructive to birds' nests, devouring greedily both the eggs and young birds.

The young are produced in May, generally three at a time.

SCIURUS CAROLINENSIS LEUCOTIS, (GAPPER) (ALLEN).

THE NORTHERN GRAY SQUIRREL AND BLACK SQUIRREL.

Specific Character.—Above grizzled light yellowish gray; beneath pure white. A yellowish brown dash of greater or less extent on the back, and separating the colours of the belly and sides. Back of ears and adjacent region of the occiput usually with a white wooly tuft.

Habitat.—Eastern United States, often seen in Ontario in company with the black variety.

Average Size.—Equal to that of a very large rat.

Average Weight.—1 to 2 pounds.

Average Height.—4 inches.

Average Length.—18 inches; nose to tail, 10 inches; tail, 8 inches.

Value of Fur.—Valueless.

These squirrels are hunted by sportsmen, being considered by many a great delicacy for the table. The gray and black varieties are in every respect alike except in colour. The black squirrel is supposed by some naturalists to be merely a melanotic variety of the gray squirrel. Some of the habits of this animal are very strange, migrations for instance, occasionally taking place, when they march in thousands in one direction being stopped by nothing, even large rivers or bodies of water are passed, and the journey proceeded with. Naturalists do not give any very satisfactory reason for these migrations. Some say it is on account of the scarcity of food, but such is not always the case.

The gray and black squirrel generally breed twice or three times during the warm season of the year, having from three to six at a litter. The nest is nearly always in a hole in a hollow tree.

Their food consists of nuts, buds of trees, and grain.

Generally speaking the squirrel is abundant in Ontario, and the four varieties mentioned before are well known.

The little animal is shot principally for the pot, its skin being of no value whatever.

It is a beautiful object of nature, and it is to be regretted for this reason that it is so seldom spared.

The squirrel feeds early in the morning, and subsists on fruit, grain, nuts, and young shoots. Immediately its meal is over the little animal returns to rest, re-appearing in the afternoon to play and chatter until twilight.

The squirrel has no cheek pouches, although it is ignorantly supposed to be furnished with them.

It is a hibernating animal, and lays up its store of food in the fall of the year.

It is naturally extremely shy, and will take alarm at the slightest noise; but if the hunter knows enough to remain still, the squirrel will return almost immediately, and thus often falls a victim to its own curiosity.

The squirrel breeds twice or three times during the spring and summer, and the female produces several young at a litter.

The young mature in August and September, and are in best condition for shooting late in fall and winter.

The squirrel is easily tamed and is a common pet.



THE NORTHERN GRAY SQUIRREL AND BLACK SQUIRREL (*Sciurus Carolinensis Leucotis*).



THE CHIPMUNK, STRIPED SQUIRREL (*Tomias Striatus*).

TAMIAS STRIATUS, (LINNÉ) (BAIRD.)

THE CHIPMUNK, STRIPED SQUIRREL.

Specific Character.—Tail to end of the hairs shorter than the body, to end of vertebræ about three-fifths the length of the body. Back and sides with five longitudinal black stripes which do not extend over the rump; the two outer on each side close together, separated by a white line; the middle or dorsal stripe with a wide interval on each side of a finely grizzled yellowish gray and brown, like that on the upper parts generally. Dark lines bordered with chestnut brown. Rump pale chesnut. Body 5 to 6 inches; tail with hairs, 4 to $4\frac{1}{2}$ inches; hind foot, 1-40 inch.

Habitat.—Eastern region of the United States and throughout Ontario.

Average Size.—Equal to that of a small rat.

Average Weight.—4 ounces.

Average Height.— $2\frac{1}{2}$ inches.

Average Length.—5 inches.

Average Value of Fur.—Valueless.

The chipmunk is commonly known as the ground squirrel, and seldom climbs to any great height.

It is a beautiful little creature, and but that it is so common and so small, its fur would probably be valuable.

It is exceedingly lively in its movements, whisking about the brushwood and small timber with swift runs and jumps, and uttering its quaint chucking cry.

It is provided with cheek pouches and is thus enabled to carry large supplies to its winter quarters, which it stocks liberally with nuts and grain.

The chipmunk is a burrowing animal and moves into its winter quarters about November.

Unless the winter be very mild, and the sun unusually strong, the little animal seldom reappears until spring.

The young are born in June and a second brood makes its appearance in August. From two to six are produced at a birth.

TABLE

Showing the principal fur-bearing and wild animals found in Ontario, with average value of the skins, and the purposes for which they are used.

Name of animal.	Average value of skin.	Purpose for which skin is used.	Remarks.
Moose .....	.....	Leather trade .....	.....
Wapiti .....	.....	" .....	.....
Caribou .....	.....	" .....	.....
Virginia Deer	20 cents per lb.	" .....	.....
Black Bear	\$5 to \$25	Robes .....	.....
Wolf	50 cents to \$2..	" .....	.....
Cross Fox	\$2.50 to \$5	Trimmings	} Fox skins are not used in Canadian markets, but are all exported to Germany and Russia.
Red Fox	75 cents to \$1..	Not used	
Lynx	\$1 to \$2	Furs and trimmings .....	.....
Otter	\$4 to \$8 .....	" .....	.....
Beaver	\$5 to \$12 .....	" .....	.....
Fisher	\$2 to \$5 .....	" .....	.....
Sable	\$1 to \$1.50.....	" .....	.....
Mink	50 cents to \$2..	" .....	.....
Wolverine.....	\$4 .....	" .....	.....
Skunk	25 cents to \$1.50	" .....	.....
Raccoon	25 cents to \$1..	" .....	.....
Muskrat	10 to 25 cents..	" .....	.....
Ermine	40 cents .....	" .....	.....
Weasel.....	10 cents .....	" .....	.....
Porcupine.....	Valueless.....	Not used.....	.....
Ground Hog	"	"	} Not used in Canada. Skins can be imported cheaper from Europe.
Northern Hare	"	"	
Grey Rabbit.....	"	"	
Squirrel, Flying.....	"	"	
Squirrel, Red	"	"	
Squirrel, Grey and Black .....	" .....	" .....	.....
Chipmunk!	" .....	" .....	.....

THE ORNITHOLOGY OF THE GAME BIRDS OF ONTARIO.

INTRODUCTION.

The following sketch of the Ornithology of the game and other birds of Ontario interesting to sportsmen and others who take an interest in that line of study, has been written with the object of suiting all classes of readers and on that account as many technical terms as possible have been omitted. In order, however, to describe the birds properly, a certain number of these terms had to be used, so that in order to make the matter intelligible to the ordinary reader, a glossary of technical terms has been added at the end of the report to prevent the necessity of a reference to works on ornithology. An effort has been made to give as nearly as is known exactly what birds of this class are residents of or visitors to the Province of Ontario, and in a concise way in the accompanying table a list of what birds the writer proposes to notice is given, together with, as near as may be, the time of arrival of the migratory birds in the spring and their departure in the autumn, the nesting and laying time, number of eggs, etc., when the young are strong on wing, or fit to shoot, etc.

All of these statements are given as the result of the close observation for a number of years of one who has given a good deal of his time to the study of bird life in Ontario, and where his own observation has been felt to be insufficient for the expression of a decided opinion, the best authorities on the subject have been consulted. So we claim that, though each bird has received but a short notice necessarily, an endeavour has been made to have what is written as reliable as possible.

A notice of the birds destructive to game birds would have been in keeping with the object of this report; but owing to a desire to keep it from being too voluminous, their consideration has been held over to possibly some future report.

The Province of Ontario on account of its vast area and extension northward receives a large portion of the great volume of bird life which annually in the spring makes its migration north for the purpose of breeding.

This great movement takes place principally during the month of May and the return journey south occurs chiefly during the latter part of September and the month of October. This strange migratory habit, which is a peculiar feature in bird life, is not confined to the birds of the New World, for the same habit obtains in the Old World. Why the birds on the first approach of spring should be seized with an irresistible desire to travel thousands of miles, in some cases, for the purpose of raising a brood of offspring, has never been satisfactorily explained. To say that it is instinct is not a sufficient answer. Many of these birds have been frequenting it may be the wilds of Brazil where their nests and interests would certainly be as safe as in the north with its inclement weather, without taking into consideration the risk the parent birds incur by the long and perilous journey to and fro beset by the thousands of gunners, not sportsmen, who infest the route and slaughter in the spring the mated birds without scruple or thought. Surely the attention of any civilised people only needs to be called to the enormity of this crime to stop forever the shooting and trapping of birds on their way to their nesting places. Several scores of varieties of birds proceed north to raise their young each season, but of this great host of bird life we have only in this report to deal with the birds known as the game birds of Ontario, or those birds which make our fair Province their home for the whole or part of the year. Some of our best game birds are not migratory in any sense of the word, but reside in Ontario, and the same parts of the Province throughout the year as long as they live, these are the quail, grouse and turkey. The ptarmigan although belonging to this family and being residents of the Province, do migrate from its most northern parts to more southern latitudes within its borders during hard and cold seasons, when perhaps food may be scarce.

It is not proposed in this report to notice all the game birds which may be found as rare or occasional visitors in the Province, but merely those which are here in more or less abundance or which visit us regularly. It is true that in view of the rapidly decreasing numbers in which these birds now return to Ontario to breed, and the greatly diminished numbers of the residents, the present steps which are being taken with a view of making our laws more efficiently protective, have not been taken a minute too soon. Already some species are either extinct or nearly so, and if we are to possess these beautiful objects of nature and leave them as a lovely heritage to our children, the laws must not only be enforced but the proper sentiment must be aroused in the people.

A want of knowledge of the existing laws may sometimes be the reason of wanton slaughter at untimely seasons, but the making of our game birds and

animals articles of commerce has the greatest effect in causing their destruction. If idle men and boys could not make money by killing game, one-half at least of the cause of its slaughter would be stopped at once. Again, if foreigners were not allowed to over-run our province at all times and seasons in quest of game without any restriction whatever, another great cause of destruction would be removed. The close seasons in the adjoining States are not the same, and large numbers of so called sportsmen visit our Province during the spring when shooting is allowed in their own country, and destroy large numbers of birds during the close season here. Another cause is the granting of permits promiscuously for the purpose of collecting birds and eggs for so called scientific purposes. This privilege is abused in almost every instance, and the skins and eggs become articles of merchandise. Exchanging eggs and skins as well as selling them to regular dealers in the Province and neighbouring States, has of late years been carried on quite largely under the permit system. One collector was heard of who boasted of having made fifty thousand skins. The Commissioners are strongly of the opinion that great care and discrimination should be exercised in the granting of these permits and that the number granted each year should be very much curtailed, that not more than five or ten should be granted during any one year, and those only to persons who are engaged in the study of natural history and who do not use the skins or eggs for barter. For a great number of years it has been felt that the existing game laws did not apply properly to all sections of the Province, with its varying climate and temperature, that in some instances the close season ended too soon and in others too late, that is in some the shooting was allowed before the birds were fully fledged, and in others the season did not begin until the birds had commenced their fall flight. It was therefore proposed by one of the Commissioners that with the view of suiting all sections as nearly as may be, the 15th day of September be the opening day for the shooting of all game in Ontario except quail, deer, elk, moose and caribou. The suggestion was at once adopted by the Commission and it was remarkable how unanimously in favour of the plan were all the witnesses who gave evidence before the Commission. In that case the Commissioners strongly recommended that the close season for all game birds and animals, except quail, deer, elk, moose and caribou, begin on December 15th and end on September 15th. The object being the further protection of the game, and because the law will then be applicable to the whole of Ontario, and thus save the misunderstanding which might occur from dividing the Province into sections or districts with a game law for each. Even with this wise suggestion there will be a few sections where the law will not suit exactly, but so nearly so that all sportsmen for the sake of the general welfare of the game, should acquiesce without murmur. An example may be given for instance in the most eastern part of the Province, woodduck and woodcock both migrate from these localities about September 15th, therefore sportsmen

from there complain that they will not have a chance to shoot either of these birds; but they should consider that if the season is opened sooner specially, for those birds, that young partridges are found on woodcock grounds and would run serious risk of being killed, and the same may be said of woodduck, for when shooting duck it is difficult if not impossible to distinguish the species at a distance, and if sportsmen were allowed to shoot woodduck before September 15th, other ducks also would suffer. Then it goes without saying that woodcock and woodduck are becoming very scarce, and perhaps it would be very wise legislation to prohibit their slaughter altogether for a term of years. It was pretty generally agreed that the close season should begin on December 15th, thus giving the sportsmen a period of three months shooting season in each year, which in view of the diminishing quantity of game should be considered enough. Many reasons might be given for this suggestion but the principal are the scarcity of game birds and animals and the greater facility in this country afforded after that date by the presence of snow in enabling the hunter to track his quarry. It would therefore be wise legislation to restrict the shooting season to three months, and those between the 15th day of September and the 15th day of December in each year.

TABLE

Shewing time of arrival and departure of Game Birds found in Ontario.

NAME OF BIRD.	Southern Ontario.	When arrive in Spring.	When leave in Autumn.	Do they Breed there.
x GROUSE (<i>Pheasant</i>):				
Ruffed Grouse or Birch Partridge.....		Resident		Yes.
x Canada Grouse, or Spruce Partridge.....		Resident in Northern Ontario		Yes.
Pinnated Grouse, or Prairie Chicken		Very rare		
x Sharp Tailed Grouse.....		Resident in Algoma ..		Yes.
x QUAIL		Resident		Yes.
x TURKEY		"		Yes.
x WOODCOCK		Middle of April.....	Oct. 15 to Nov. 1	Yes.
x SNIPE:				
Common or Wilson's		Middle of April.....	Oct. 15 to Nov. 1	Yes, sparingly.
Pectoral Sandpiper or Jack Snipe.....		May 1st.....	October 15th....	No.
Redbreasted		"	"	No.
x RAIL:				
Sora or Carolina.....		Early in May	October 15th....	Yes.
x King		"	" 1st	Yes.
x Virginia		"	" 1st	Yes.
PLOVER:				
Golden		Early in May	October 15th....	No.
Tell Tale or Greater Yellow Shanks		April 15th.....	" 15th....	No.
Lesser Yellow Shanks		"	" 15th....	No.
Curlew		June 1st.....	September....	No.
SWAN:				
Whistling.....		April 1st	November	No.
GEESE:				
Brant.....		May 15th.....	October 1st....	No.
Canada		Early in April	November	No.
Snow		"	October	No.
DUCKS:				
Gadwall		Early in April.....	October	No.
Redhead		"	November	No.
x Black		April 1st	" 15th....	Yes.
Pintail		May 1st.....	Late October ..	No.
x Mallard.....		April 10th.....	"	Yes.
x Shoveller or Spoonbill		May 1st	Early October ..	Yes.
Canvasback			November	No.
x Blue Winged Teal.....		April 20th.....	Sep. 20 to Oct. 1	Yes.
Green Winged Teal		May 1st.....	"	No.
American Golden Eye.....		" 10th	December 20th ..	No.
x American Widgeon		" 15th	October 1st....	Yes.
Buffle Headed.....		April 20th.....	" 15th....	No.
x Wood Duck.....		" 15th.....	" 15th....	Yes.
x Scaup or Blue Bill		" 20th.....	November	Yes.
Ruddy Duck		" 15th.....	"	No.
Coween or Long tailed.....		" 15th.....	"	No.
Scoter		" 15th.....	"	No.

NOTE 1.—Place a cross **x** before the name of any bird that breeds in the locality named.NOTE 2.—Place a square \square after the name of any bird that does not breed in the locality named.

NOTE 3.—Place a line — under the names of birds of passage, or birds that stay but a short time.

NOTE 4.—The above dates are approximate.

TABLE referring to Breeding Seasons and Migration of Birds found in Ontario.

WILD BIRDS,	RELATING TO BIRDS BREEDING IN ONTARIO.			RELATING TO MIGRATORY BIRDS.		Remarks.
	Laying Time.	No. of Eggs.	End of Hatching Time.	Time when all young are strong on wing.	Arrive.	Depart.
xGROUSE (<i>Phasianæ</i>): <input type="checkbox"/> Ruffed Grouse, or Birch Partridge. <input type="checkbox"/> Canada Grouse, or Spruce Partridge <input type="checkbox"/> Pinnated Grouse, or Prairie Chicken <input type="checkbox"/> xSharp Tailed Grouse <input type="checkbox"/>	About May 1..... " 15.....	8 to 12 8 to 12	June 1..... " 15.....	Sept. 1..... " 1.....		Resident throughout Ontario. Resident in Northern Ontario. Rare in Ontario except perhaps occasional in Western Ontario. Rare in Ontario except in the Algoma District. Resident throughout Southern Ontario.
xQUAIL <input type="checkbox"/>	About May 1.....	10 to 20	Aug. 30.....	Oct. 15.....		Rare. Only found in S. Western Ontario.
xTURKEY <input type="checkbox"/>	April 15.....	10 to 15	May 15.....	" 1.....		These dates for Southern Ontario.
xWOODCOCK <input type="checkbox"/>	May 1 to 15.....	3	May 15 to 30	Sept. 1.....	About Apl. 15	Oct. 10 to Nov. 1.....
xSNITPE: Common or Wilson's <input type="checkbox"/> Pectoral Sandpiper or Jack Snipe <input type="checkbox"/>	April 25 to May 10 <input type="checkbox"/>	3	May 30.....	Sept. 1.....	April 10 to 15	Late in October..... Breeds sparingly in Southern Ontario. Supposed to breed in Arctic regions. Arrives here in October, going south. Rare in Ontario.
Redbreasted <input type="checkbox"/>						
RAIL: Sora or Carolina <input type="checkbox"/> King <input type="checkbox"/> Virginia <input type="checkbox"/>	June..... May..... June.....	8 to 10 6 to 8 6 to 9	July 1..... " 1..... " 1.....	Sept. 1..... " 1..... " 1.....	Early in May. " " " "	October 15..... " 1..... " 1.....
PLOVER: Golden <input type="checkbox"/>	Breed only in	Arctic	regions.		May.....	October 15.....
Tell Tale or Greater Yellow Shanks <input type="checkbox"/>	"	"	"		April 15.....	" 15.....
Lesser Yellow Shanks <input type="checkbox"/>	"	"	"		" 15.....	" 15.....
Curlew <input type="checkbox"/>	"	"	"		" 15.....	September.....
SWAN: Whistling <input type="checkbox"/>	"	2 to 5	"		April 1.....	November.....
						Remain on north shore of Lake Erie 2 or 3 weeks. Rare in Ontario.

GESE:		5 to 8	Breeds far north.	May 15.	October 1.	Rare in Ontario.
Brant	<input type="checkbox"/>	5 to 6	"	Early April	November	
Canada	<input type="checkbox"/>	5 to 6	"	"	October	
Snow	<input type="checkbox"/>					
DUCKS:		6 to 12				
Gadwall	<input type="checkbox"/>	7 to 8	Sept. 1.	Early April	November	Rare.
Redhead	<input type="checkbox"/>	8 to 10	" 1.	April 1.	"	Some remain all winter.
Black	<input type="checkbox"/>	8 to 10	June 1.	May 1.	October	Breeds in Arctic regions. Mainly a fall visitor.
Pintail	<input type="checkbox"/>					
Mallard	<input type="checkbox"/>	10 to 14	June 10	April 15	"	Breed throughout Ontario sparingly.
Shoveller or Spoonbill	<input type="checkbox"/>	8	" 10	May 1.	"	Breeds in the North and North-west.
Canvasback	<input type="checkbox"/>	8 to 10	June 10	April 20	November	Breeds far north.
Blue Winged Teal	<input type="checkbox"/>	8	June 10	May 1.	Sept. 20 to Oct. 1.	Some remain all winter if water is open.
Green Winged Teal	<input type="checkbox"/>	6 to 10	June 10	" 10.	December 1.	Supposed to breed in Southern Ontario.
American Golden Eye	<input type="checkbox"/>	8 to 12	June 10	April 20	October 1.	Breeds in the far north.
American Widgeon	<input type="checkbox"/>			" 15.	" 15.	
Buffle Headed	<input type="checkbox"/>	12	June 15	" 20.	November	Breeds far north.
Wood Duck	<input type="checkbox"/>	6 to 8	"	" 15.	Nov. or Dec.	Breeds in Arctic regions. Some remain all winter if water is open.
Scaup or Blue Bill	<input type="checkbox"/>					
Coween or Long Tailed	<input type="checkbox"/>					
Ruddy Duck	<input type="checkbox"/>	8 to 12	July 1.	" 15	November	Breeds in Arctic regions.
Scoter	<input type="checkbox"/>			" 15	"	

NOTE 1.—Place a x before the name of any bird which should not be marketed or sold.

NOTE 2.—Place a ☐ after the name of any bird which should not be exported.

NOTE 3.—Place a — under the name of any bird which should not be imported, except under a high duty.

NOTE 4.—Make remarks on back if there is not room enough in column.

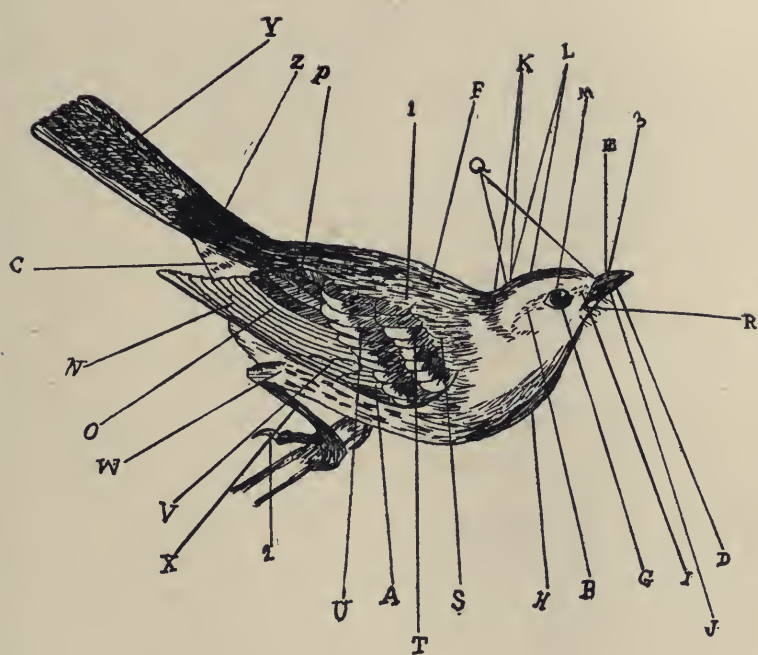
EXPLANATION OF TERMS

USED IN DESCRIBING THE OUTER FORMS OF BIRDS.

- A. Alulu.
- B. Auriculars.
- C. Crissum or lower tail coverts.
- D. Commissure.
- E. Culmen.
- F. Interscapulars.
- G. Iris.
- H. Jugulum.
- I. Lores.
- J. Mandible.
- K. Nape.
- L. Occiput.
- M. Orbit.
- N. Primary quills or primaries.
- O. Secondary quills or secondaries.
- P. Tertiary quills or tertiaries.
- Q. Pileum.
- R. Rictus.
- S. Lesser wing coverts.
- T. Middle wing coverts.
- U. Greater wing coverts.
- V. Primary coverts.
- W. Tibia.
- X. Tarsus.
- Y. Tail feathers or Rectrices.
- Z. Upper tail coverts.
- 1. Scapulars.
- 2. Unguis or Claw.
- 3. Maxilla.

} Remiges.

} Secondary coverts.



FAMILY ANATIDÆ.—THE SWANS, GEESE AND DUCKS.

Of the family Anatidæ we have in Ontario a very large representation, for birds of this group are generally most numerous in the northern portions of the earth, hence Ontario, on account of her great extent northward toward their breeding grounds, comes in for a large share of them. The representatives of this family of birds in North America may, for convenience, be divided into three groups, viz. :—

The Cygninæ, or Swans.

The Anserinæ, or Geese.

The Anatinæ, or Ducks.

Of the sub-family Cygninæ or swans there are two varieties which inhabit America, the *Olor Columbianus* or Whistling swan, and the *Olor Buccinator* or Trumpeter swan.

OLOR COLUMBIANUS (STEJN).

THE WHISTLING SWAN.

Specific Character.—Tail usually of twenty feathers ; bill not longer than the head. Entire plumage pure white ; the head, sometimes the neck, or even the entire under parts tinged with rusty. Bill, tarsi, and feet, deep black, the bare loreal skin usually marked by an oblong spot of orange or yellow (dull, pale reddish, yellowish or whitish in the skin) ; iris, brown. Young light plumbeous, paler beneath ; the fore part and top of the head tinged with reddish brown. Bill, reddish flesh colour, dusky at the tip ; feet, dull yellowish, flesh-coloured or grayish.

Total length, about 53.00-55.00 inches ; extent about 7.00 feet ; wing 21.50 ; culmen 3.82 ; tarsus 4.06 ; middle toe 5.40.

Habitat.—The whole of North America, breeding far north. This is the smaller of the North American swans, and is known among students of ornithology as the American swan. It is found throughout the whole northern portion of the continent from the Atlantic to the Pacific coast, being more abundant in the interior, where it breeds on islands in inland lakes, and as far north as the shores of the Arctic Ocean.

It occurs in the southern part of Ontario chiefly as a spring and fall migrant, being seen regularly then upon most of the principal shooting grounds such as the St. Clair Flats, Long Point, etc. Almost every spring one or more may be seen in the marsh at the mouth of the Grand River, staying for a week or two and then disappearing. The principal highway of migration is the Mississippi valley. It goes north in April and returns in November.

The swan feeds principally on vegetable food, such as the roots of some marsh plants as the *Sagittaria*, and on grasses and various water plants, with snails, etc. This bird is not in full plumage, that is, pure white, with black legs and feet, until it is five years old. It nests on the ground, eggs from three to five, of a brownish white colour. The swan is said to be good for the table when young.



THE WHISTLING SWAN (*Olor Columbianus*).

 OLOR BUCCINATOR (RIDGW).

THE TRUMPETER SWAN.

Specific Character.—Tail usually twenty-four feathers ; bill longer than head. Adult—Entire plumage pure white, the head, sometimes the neck also, or even the entire under parts, tinged with rusty. Bill, naked ; lores, legs and feet, uniform deep black ; iris, brown. Young—In winter the young has the bill black, with the middle portion of the ridge to the length of an inch and a half, light flesh colour, and a large, elongated patch of light purplish on each side ; the edge of the lower mandible and tongue dull yellowish flesh colour. The eye is dark brown. The feet are dull yellowish brown, tinged with olive ; the claws brownish black ; the webs blackish brown. The upper parts of the head and cheeks are light reddish brown, each feather having towards its extremity a small oblong whitish spot narrowly margined with dusky ; the throat, as well as the edge of the lower eyelid, nearly white. The general colour of the other parts is grayish white slightly tinged with yellow ; the upper part of the neck marked with spots similar to those on the head.

Total length about 58.50-68.00 inches ; extent about 8.00 to nearly 10.00 feet ; wing 21.00-27.25 inches ; culmen 4.34-4.70 inches ; tarsus 4.54 ; middle toe 6.00.

Habitat.—Chiefly the interior of North America, breeding from Iowa to Dakota northward, but principally far north. It arrives during its migration very early in the spring, some say earlier than geese, and returns late in the fall. Its habits are much the same as those of the preceding species, hence it is not necessary to describe them. It is a larger bird. Audubon mentions having taken one which weighed thirty-eight pounds, but the average is about eighteen or twenty pounds.

SUB-FAMILY ANSERINÆ.—THE GEESE.

Of the geese which visit Ontario either regularly or occasionally we may mention at most six varieties, two of which may be said to constitute one species, viz. :

Bernicula Canadensis—Canada Goose.

- *Bernicula Canadensis, Hutchinsii*—Hutchin's Goose.

Brenta Bernicula—Brant.

Chen Hyperborea, Nivalis—Greater Snow Goose.

Chen Cærulescens—The Blue-winged Goose.

Anser Albifrons, Gambelli—American White-fronted Goose.



THE CANADA GOOSE (*Bernicula Canadensis*).

BERNICULA CANADENSIS (BAIRD).

THE CANADA GOOSE.

Specific Character.—Head and neck deep black, the former with a white patch covering the throat and extending up over the cheeks to behind the eyes, growing gradually narrower above, the upper outline usually more or less truncated; this white patch, however, sometimes interrupted on the throat by a narrow black stripe or isthmus. Very rarely a broad-white band more or less distinctly indicated, crosses the forehead between the eyes. Back of neck frequently bordered below by a white collar more or less distinct. Upper surface grayish brown, varying from almost cinereous to umber, each feather bordered terminally by a paler shade; lower parts with the exposed surface of about the same shade as the tips of the feather of the upper part, the concealed portion of the feathers of the shade of the prevailing colour above—this much along the sides and on the flanks. Primaries and their coverts plain dusky, the former growing nearly black terminally. Anal region, crissum, and lower tail coverts immaculate pure white. Tail, plain deep black; rump, plain blackish slate. Bill and feet deep black.

Total length about 20 to upwards of 40 inches; wing 13.60 to 21.00; culmen .95 to 2.70; depth of maxilla at base, .60-1.20, width, .52-1.20; tarsus, 2.10-3.70; middle toe, 1.80 to 1.40; tail feathers, 13 to 20.

Habitat.—Temperate North America in general, breeding in the United States and British provinces principally to the far north.

As will be observed in the description of the Canada goose, great variations in size are given, greater it may be than in any of the domesticated kinds which are called varieties. The variety called Hutchin's goose has exactly the same plumage as *B. Canadensis*, the only difference being that the bird is smaller, so that the best ornithologists are in doubt as to whether *var. Hutchinsii* should be considered a variety. The only character which appears constant is that the smaller bird has usually from thirteen to sixteen tail feathers while the larger averages eighteen or twenty. Their habits are exactly alike, and they are found together in the same flock. If, then, we may consider these two birds as one and the same, under the name of our common wild goose, it is found distributed over the whole of North America from its most southern to its most northern limit and from the Atlantic to the Pacific coast. It is said to breed as far south as latitude 42° N. and throughout all the region north.

This bird migrates north at the end of March or early in April, returning in November. During its journey north it often stops at any favourable feeding ground for a week or two; in fact, all along the north shore of Lake Erie it is no uncommon thing for large flocks of these birds to frequent fall wheat fields for a week or two making sad havoc of the wheat in low places in the field. They are very wary, and difficult to get a shot at in the field, but a good many are shot every spring at such places as Long Point, St. Clair Flats, etc., etc. In the fall they also rest on their way in these same localities, but not in such great numbers. Its food consists of leaves, grasses, seeds of water plants, etc. When well grown and fat it will often weigh twelve pounds. It nests on the ground, laying usually about six eggs. Dr. Coues says, this goose has been known in the upper Missouri and Yellowstone region to breed in trees. In Ontario this bird is usually shot in the spring, which seems a most unsportsmanlike proceeding, as the birds are then on their way to their nesting-places. They are certainly shooting the goose which lays the eggs from which come the autumn flocks.

CHEN HYPERBOREUS (RIDGW).

THE SNOW GOOSE.

Specific Character.—Adult—Entire plumage, except the primaries, snow white, the head sometimes stained with orange rufous anteriorly; primaries deep black, fading basally into grayish; the primary coverts and alula being hoary ash. Bill, purplish red, the nail whitish, and the intertomial space black; iris, dark brown, eyelids, whitish; feet purple or orange red, the soles, dingy yellowish. Young—Above, including the head and neck pale cinereous, the feathers of the dorsal region more whitish on their edges; wing covers and tertials dark cinereous centrally, their edges broadly pure white; secondaries mottled cinereous skirted with white; primaries as in the adult. Rump, upper tail coverts, tail, and lower parts immaculate snowy white; the tail and breast tinged with pale ash. Head usually more or less tinged with orange rufous, this deepest anteriorly. Bill and feet dusky.

Total length, about 30.00 inches; wing, 15.00-18.50; culmen, 1.95-2.80; depth of maxilla at base, 1.15-1.50; tarsus, 2.80-3.50; middle toe, 2.10.

Habitat.—The whole of North America, breeding far north; more rare on the Atlantic coast than westward; south to Cuba.

The Snow goose is not so common in Ontario as the Canada goose; in fact, some authors say it is only a straggler in Ontario; still, in some localities they are seen almost every autumn sometimes in company with the Canada geese. Several specimens have been taken on the Grand River (the writer has one of them in his collection), and no doubt the same may be said of other shooting stations in Ontario. It is a fine bird for the table, its flesh being white and better flavoured than that of the other geese. Its principal line of flight during its migrations is along the Mississippi valley. It is very common in the North-West being there called by the Indians "Wevois," and by others "Wavie."



THE SNOW GOOSE (*Chen Hyperboreus*).

CHEN CÆRULESCENS (RIDGW).

THE BLUE-WINGED GOOSE.

Specific Character.—Head and upper half of the neck, white, or mostly white the former frequently washed with orange rufous anteriorly; lower neck and body grayish brown, the feathers bordered terminally with paler; these pale edgings, however, nearly obsolete on the neck where the tint is darker, inclining to plumbaceous umber, which joins irregularly against the white above it. Rump and wings plain pearl gray or bluish cinereous, the former sometimes white in striking contrast to the deep, grayish brown of the scapulars, sides, etc., that of the rump fading into white on the upper tail coverts, and that of the greater coverts edged externally with the same. Primaries black, fading basally into hoary gray; secondaries, deep black, narrowly skirted with white; tail, deep cinereous, the feathers distinctly bordered with white. Bill, reddish, the commissural space black; feet reddish.

Total length, about 30.00 inches; wing, 15.00-17.00; culmen, 2.10-2.30; tarsus, 3.00-3.30; middle toe, 2.20.

Habitat.—North America generally, but chiefly the interior.

The Blue-Winged goose was once thought to be the young of the Snow goose but now by ornithologists is considered a good distinct species. The general characteristics are very much the same, but the plumage is different. It is often seen in Ontario occurring with other geese. A few years ago a good specimen was caught on the banks of the Grand River by a colley dog belonging to Mr. Armour, a farmer, who kept it for a number of years. It lived with the tame geese, and soon became master of the flock. It never mated with the rest of the flock; its plumage never changed, and it fed on grass and grain as the others did. Some passing hunter shot it one day. The writer also has a good specimen in his collection taken in the same locality.

ANSER ALBIFRONS GAMBELLI (RIDGW).

AMERICAN WHITE FRONTED GOOSE.

Specific Character.—Prevailing colour brownish gray, this uniform on the head and neck and becoming much darker on the flanks; feathers of the mantle, wings, sides, and flanks distinctly bordered terminally with pale brownish ash sometimes approaching grayish white; upper edges of the upper layer of flank feathers pure white, producing a conspicuous white stripe when the feathers are properly adjusted. Breast and abdomen grayish white, mixed more or less with irregular spots and blotches of black, sometimes scattered and isolated but oftener more or less confluent. Anal region, crissum and upper tail coverts immaculate pure white; rump brownish slate. Greater wing coverts glaucous gray tipped with white; secondaries black, their edges narrowly white; primaries slaty black, growing ashy basally; primary coverts glaucous gray. Tail brownish slate broadly tipped with white, the feathers narrowly skirted with the same. Front of the head to base of the bill and about half way across the lores and forehead including the anterior border of the chin white, bordered behind by brownish-black, which gradually fades into the grayish brown of the head and neck. Bill reddish, the nail white; feet reddish.

Total length about 27.00 inches; wing, 14.50 to 17.25; culmen, 1.40-2.35; tarsus 2.60-3.10; middle toe, 2.35-2.70. Tail feathers 16-18 in number.

Habitat.—The whole of North America, breeding far northward. Prof. Baird says: "The American " white fronted or "Laughing goose," is a resident during the summer months in high Arctic regions migratory in spring and fall, and in winter diffused over all the southern portions of North America, being more abundant in the central and western regions, and comparatively rare on the Atlantic coast." It is a casual visitor in Ontario.





THE BRANT GOOSE (*Bernicula Brenta.*)

BERNICULA BRENTA (BAIRD).

THE BRANT GOOSE.

Specific Character.—Head, neck, jugulum, continuous black, the anterior portion of the head having a brownish cast; posterior outline of the back on the jugulum very regular, and sharply defined against the brownish gray of the breast. Middle of the neck with a transverse crescentic patch of white on each side formed of white tips and subtips of the feathers, the black shining through in places so as to form oblique lines. Above smoky plumbeous, the feathers distinctly bordered terminally with a much paler and more brownish shade. Wings like the back but with a somewhat plumbeous cast, the paler margins nearly obsolete. Secondaries blackish brown; primaries brownish black. Tail uniform black, but almost concealed by the snow white lengthened coverts the upper of which, however, are invaded by a medial stripe of blackish plumbeous brown from the rump. Breast, abdomen, sides and flanks, much like the upper parts, but the light tips to the feathers whiter, broader, and more conspicuous; anal region and crissum immaculate snow white.

Total length, 24.00 inches; wing, 12.30; culmen, 1.20; tarsus, 2.05; middle toe, 1.70.

Eastern North America generally, but chiefly the Atlantic coast; rare away from salt water. Is a migrant in the spring to the Arctic regions to breed. It is rare in Ontario being only found here as a straggler.

SUB-FAMILY—ANATNIAE—THE DUCKS.

Of this sub-family we have in Ontario the following birds as the principal varieties of ducks interesting to sportsmen, viz. :—

- Anas boschas—The Mallard.
 - Anas obscura—The Black duck.
 - Chaulelasmus streperus—The Gadwall or Gray duck.
 - Dafila acuta—The Pintail, Sprigtail.
 - Mareca Americana—The American Widgeon, Baldpate.
 - Spatula clypeata—The Shoveller, Spoonbill duck.
 - Querquedula discors—The Blue-winged Teal.
 - Nettion carolinensis—The American Green-winged Teal.
 - Aix sponsa—The Wood duck, Summer duck.
 - Fulix marila—The Scaup duck, Bluebill.
 - Fulix affinis—The Lesser Scaup duck.
 - Aethya vallisneria—The Canvas-back duck.
 - Aethya Americana—The Red-headed duck.
 - Clangula glaucion Americana—The American Golden-eye.
 - Clangula albeola—The Buffle-headed duck, Butter-ball.
 - Harelda hyemalis—The Long-tailed duck, Old Squaw.
 - Oedemia Americana—The American Black Scoter.
 - Melanetta velvetina—The Velvet Scoter.
 - Erismatura rubida—The Ruddy duck.
-



THE MALLARD (*Anas Boschas*).

ANAS BOSCHAS (LINN).

THE MALLARD.

Specific Character.—Adult in full plumage, spring; head and neck continuous soft brilliant metallic green, showing purple and golden bronze reflections in different lights. A ring of pure white round the lower part of the neck interrupted on the nape; jugulum and upper part of the breast rich dark chestnut. Inter-scapulars brownish gray finely waved with grayish white; scapulars and lower parts grayish white delicately waved with dark ash. Over webs of tertials dark umber brown, this also tinging the adjoining scapulars; wing coverts uniform deep brownish gray, the last row tipped with opaque velvety black showing faint reflections of bluish green. Tail white, the feathers grayish centrally. Two middle feathers black slightly recurved; the two longer upper tail coverts greatly recurved. Bill, olive yellow or ochraceous olive, the nail black; iris hazel; tarsi and toes fine rich orange red.

Length, 24.00 inches; extent, 38.00; wing, 11.00; culmen, 2.10; tarsus, 1.60; middle toe, 2.00.

Adult in summer.—Closely resembling the female, being somewhat darker in color. Adult female: wing as in the male; above brownish dusky, much variegated by broad pale ochraceous edges to the feathers; beneath pale ochraceous, the feathers dusky centrally, producing a thickly spotted or striped appearance. On the top of the head the dusky predominates as it also does in a loreal and auricular line forming a lighter superciliary stripe between this and the crown.

Habitat.—North America in general, south to Panama, Cuba, Bahamas, Greenland, Palæarctic region. This duck has a very wide distribution both in the old and new world. In North America it is found from the extreme north to the extreme south and breeds in the same localities. Throughout Ontario it is probably our most common duck. It is undoubtedly the origin of the common domestic duck of our poultry yards, and in the wild state does not object to mating with ducks of other varieties, for generally if a hybrid is found it will be seen to have many of the characteristics of the Mallard. This bird is common in all of our lakes, ponds and rivers, breeding in any suitable locality, nesting on the ground in the vicinity of water, sometimes in a tree and laying from six to eight greenish white eggs. Upon these the female sits for four weeks, the male keeping apart to moult. The little ones are ready to run to the water as soon as hatched. The breeding season lasts from early May till June. The Mallard feeds chiefly on seeds of grasses, fibrous roots of plants, worms, mollusks, insects, grain, as wild rice, etc. It is considered one of the best ducks for the table both on account of its size and its flavour.

ANAS OBSCURA (GMEL).

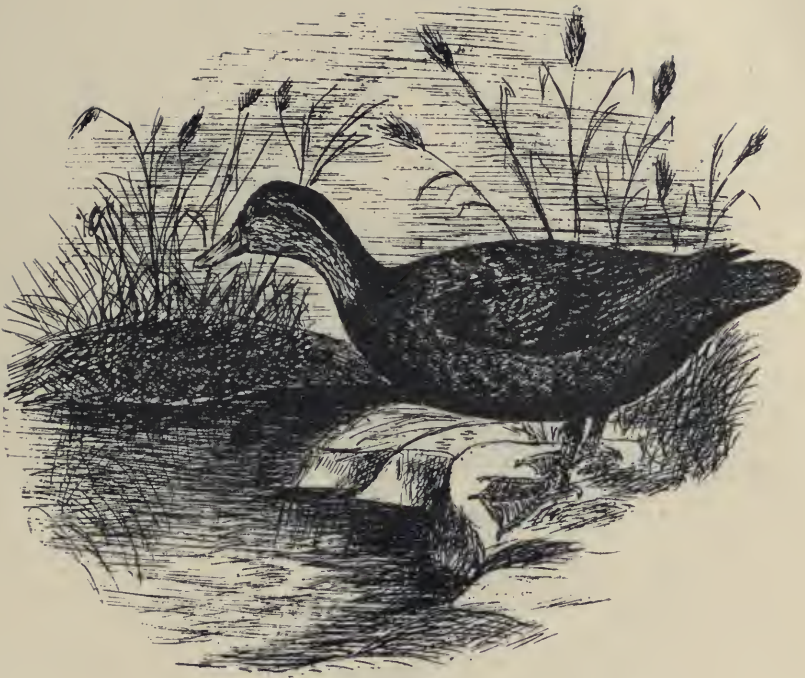
THE BLACK MALLARD: BLACK DUCK.

Specific Character.—Adult: Prevailing colour brownish black or dusky, the feathers edged, more or less distinctly with pale grayish fulvous; head and neck about equally streaked with grayish white, more ochraceous near the bill, and dusky; pileum nearly uniform dusky, and a dusky stripe back from the eye. Speculum violet, changing to green in some lights, narrowly tipped with white and with a broad subterminal bar of velvety black; last row of coverts dusky brownish broadly tipped with black. Sexes alike. Bill yellowish green, the unguis dusky; iris dark brown; feet orange red; the webs dusky.

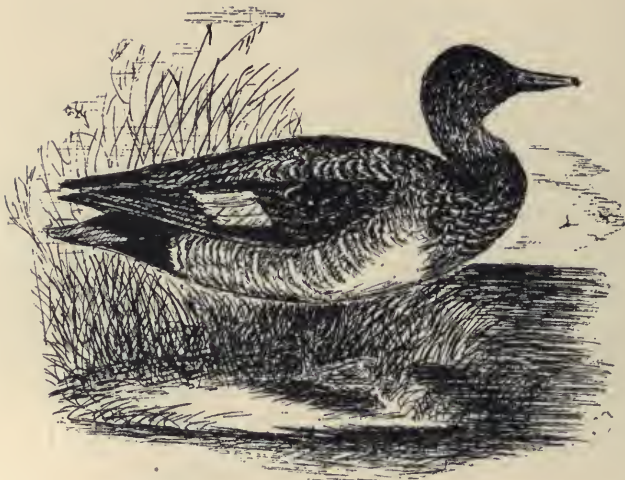
Total length, 22.00 inches; wing, 10.50 to 11.50; culmen, 2.00; tarsus, 1.70; middle toe, 1.90.

Habitat.—Eastern North America, west to Utah and Texas, north to Labrador.

The black duck is one of the common ducks of Ontario occurring on or near all suitable streams or lakes. It is very fond of retiring to some pond in a piece of woods or swamp to raise its brood and as soon as the young are able to fly well, they are taken each night about dusk to the adjoining river or lake returning about daylight. These birds are said to keep moving about all night. They feed upon roots, small shellfish, etc. The black ducks usually arrive in Ontario the earliest of any of the ducks and remain the longest in the fall. Having paired they retire to some secluded spot, make their nest on the ground under a brush heap or other cover, and lay in it from 8 to 10 whitish eggs. The female begins to lay about May 1st. It is considered one of the best ducks for the table, as well as being one of the most abundant.



THE BLACK MALLARD, BLACK DUCK (*Anas O'scura*).



THE GADWALL, GRAY DUCK (*Chaulelasmus Streperus*).

CHAULELASMUS STREPERUS (GRAY).

THE GADWALL: GRAY DUCK.

Specific Character.—Adult, male: Ground colour of the head and neck pale brown or brownish white, thickly speckled with black; on the pileum the brown deeper and more uniform, and the specks obsolete; on the occiput when present they incline to the form of transverse bars. Jugulum marked with greatly curved bars or crescents of white and black; the bars of the latter wider. Lateral portions of the body beneath, back and scapulars finely undulated in curved transverse lines with slate colour and white. Many of the longer scapulars plain brownish gray broadly edged with a lighter more fulvous tint. Rump plain dull slate. Tail coverts above and below intense opaque velvety black. Tail cinereous, faintly edged with white. Middle rows of wing coverts bright chestnut, the anterior coverts brownish gray, and the posterior ones deep black; last rows deep velvety black. Speculum immaculate pure white, the lower feathers cinereous, some with black on the outer webs, narrowly tipped with white; tertials plain pale ash, the primaries a darker shade of the same. Bill bluish black. Iris reddish hazel. Feet, dull orange-yellow; claws, brownish black; webs dusky. Female much the same plumage.

Total length, 19.22 inches; wing, 10.00 to 11.00; culmen, 1.60; width of bill, .60 to .70; tarsus, 1.50; middle toe, 1.80.

Habitat.—Nearly cosmopolitan, (Europe, Asia, Africa and North America), temperate North America in general, breeding chiefly within the United States and West Indies. The Gadwall or Gray-duck, like the other fresh water ducks, is distributed pretty generally over North America, though it is nowhere very plentiful. It is seen almost every autumn in Ontario. Its habits are much the same as those of the Mallard.

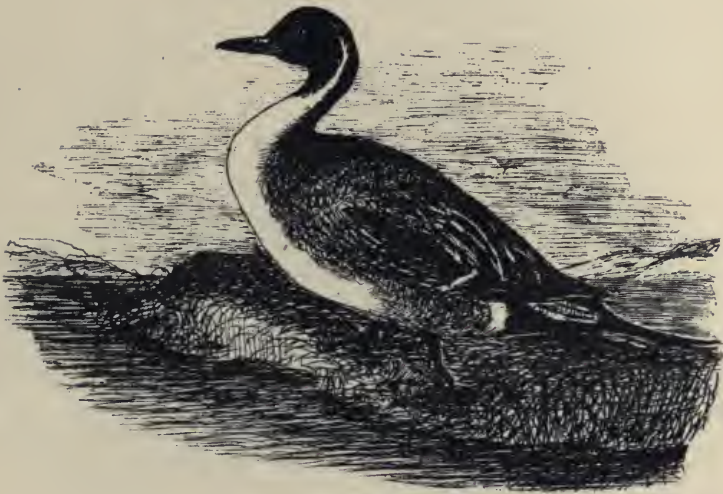
DAFILA ACUTA (BONAT).

THE PINTAIL: SPRIGTAIL.

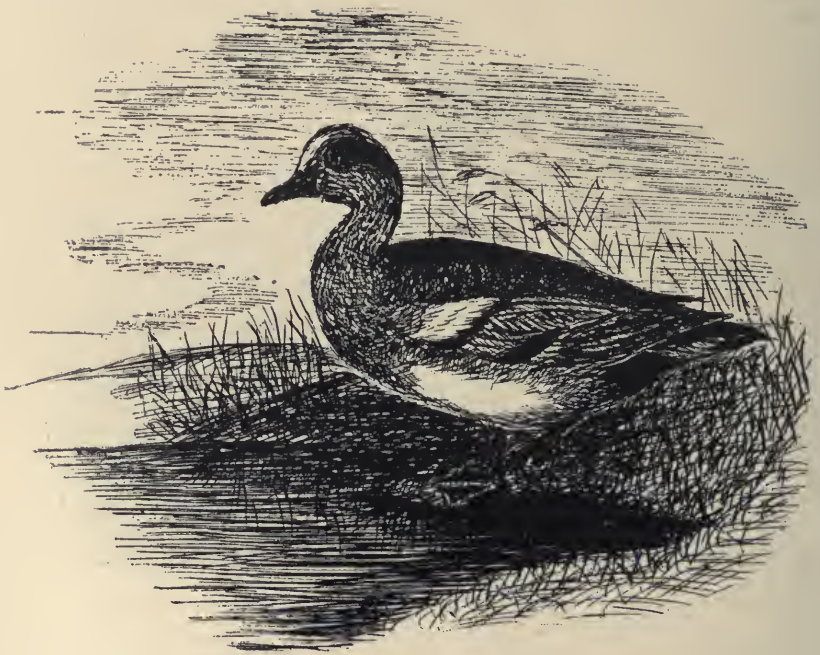
Specific Character.—Head and upper half of neck hair brown or grayish umber, the upper surface darker, often inclining to deep burnt umber; all the feathers appreciably darker centrally, producing an indistinctly and minutely speckled appearance. On each side of the occiput the brown has a distinctly metallic gloss of dull green, showing a faint purple reflection in some lights. Upper half of the nape opaque intense black, separated from the brown by an upward extension of the white of the lower neck nearly to the occiput. Stripe on each side of the nape as described above, lower half of the neck frontally and laterally, jugulum, breast and abdomen, immaculate white. Lower half of the nape with entire dorsal region and lateral lower parts finely waved with transverse rather zigzag lines of black and white of nearly equal width. Longer scapulars opaque, velvety black centrally, edged broadly with grayish white; outer scapulars with exposed ends of their outer webs entirely velvety black. Tertials silvery ash with a medial stripe of intense velvety black. Speculum dull green varying to dull bronzy purple with a subterminal bar of velvety black and a tip of white. Wing coverts very uniform brownish gray, the last row broadly tipped with cinnamon rufous. Primaries dull slaty. Upper tail coverts with outer webs black; inner ones grayish white; lower coverts deep opaque velvety black, the exterior row with their outer webs white; post femoral space delicate cream colour. Tail feathers dark cinereous edged with white, the elongated middle pair uniform deep black. Bill, plumbeous blue; the ungui, base, and strip along the culmen, black; iris, brown; feet, dusky. Female quite different, being of a general grayish colour and lacking the long central tail feathers.

Total length about 26.00 inches; extent, 36.00; wing, 10.25; tail, 7.25; culmen, 1.85 to 2; tarsus, 1.55; middle toe, 2.

Habitat.—The whole of North America, Europe. Breeding chiefly far north; migrating south in winter as far as Panama. The distribution of the Pintail is quite as extensive as the Mallard, for besides being found throughout North America it is found in Europe, Asia, (Ceylon, China, etc.) Africa. It is a migrant going to the far north in the spring to breed, laying eight or nine eggs as a setting. It is one of the handsomest of our ducks as well as one of the best for the table. It is quite abundant during the spring and fall migration in Ontario and a few pairs are said to breed at the St. Clair Flats. On account of its very swift flight it is considered one of the most difficult ducks to shoot.



THE PINTAIL, SPRIGTAIL (*Dafila Acuta*).



THE AMERICAN WIDGEON, BALDPATE (*Mareca Americana*).

MARECA AMERICANA (STEPHENS).

THE AMERICAN WIDGEON: BALDPATE.

Specific Character.—Forehead and middle of crown, (longitudinally) white, generally immaculate; ground colour of head and neck, white, sometimes more or less soiled with grayish or brown and thickly speckled with black; a broad space of metallic blackish green on the side of the occiput running forward to the eye and sometimes down the nape, where the two spaces are confluent; jugulum plain pinkish vinaceous; sides and flanks the same delicately undulated with black; lower tail coverts velvety black; rest of the lower parts pure white; back and scapulars grayish white more or less tinged with the colour of the sides and similarly undulated with black. Wing coverts immaculate pure white, the anterior portion of the lesser covert region cinereous, and the last row tipped with velvety black; speculum soft metallic green anteriorly, velvety black posteriorly; tertials, velvety black sharply edged with white, the lower one with its lower edge entirely pure white; primaries plain dark cinereous. Rump cinereous minutely undulated on the edges of the feathers; upper tail coverts velvety black the inner webs mostly grayish; tail hoary cinereous; bill light grayish blue, the tip black; iris brown; legs and feet, light bluish. The female is in general colour dusky grayish above and white beneath.

Total length 20 to 22 inches; wing, 10.25; culmen, 1.30; tarsus, 1.50; middle toe, 1.65.

Habitat.—North America in general, north to the Arctic Ocean, south to Guatemala and Cuba. Accidental in Europe. Breeds nearly throughout its range. The Baldpate is quite a common duck throughout Ontario, in the autumn frequenting all suitable waters or marshes, and leaving them early to go south, earlier than some other species. On the sea-coast it associates with the Canvasback and Bluebill upon whose ability to dive better than itself, it depends largely for its food, stealing from them as they rise to the surface of the water the tender roots of the wild celery and other plants of which both are so fond. This bird is said to be quite as good eating as the Canvasback. It nests on the dry ground near some water, laying some 8 to 12 eggs of a creamy white colour.

SPATULA CLYPEATA (BOIE).

THE SHOVELLER: SPOONBILL DUCK.

Specific Character.—Head and neck, dark metallic bluish green, much duller than in (*Anas boschas*); breast and outer scapulars white, the former sometimes spotted with dusky; entire abdomen and sides uniform chestnut; crissum dark metallic bluish green, bounded anteriorly by a band of finely undulated grayish white; back and inner scapulars dusky, the feathers sometimes bordered with white, longer lanceolate scapulars marked with a mesial lanceolate stripe of white; wing coverts light grayish blue, the last row tipped with white; forming a narrow band across the wing; speculum bright metallic green, very narrowly tipped with white; tertials dusky black with faint green reflections, and marked toward the end with an indistinct mesial stripe of grayish white; primaries and their coverts dull slaty gray; rump and upper tail coverts black, the former with faint, the latter with bright green reflections; rectrices chiefly grayish white, the middle ones dark grey, edged with white; bill deep black; iris bright yellow; legs and feet beautiful orange red. Female.—Wings as in the male but colours duller. Other parts grayish brown above varied with brownish white; brownish white below.

Total length about 20.00 inches; extent, 32.00; wing, 9.00; culmen, 2.60; tarsus, 1.50; middle toe, 1.70.

Habitat.—The whole of the Northern Hemisphere; Australia. Breeding from Texas to Alaska wintering as far south as Guatemala and Cuba.

The Shoveller is distributed over the greater part of the old as well as the new world. It is found in North America, Europe and Asia, throughout Africa, etc., etc. It is not a very numerous species and yet is found so widely distributed. In Ontario the Spoonbill is not very common and yet at almost any of the principal shooting stations a few are seen and shot every autumn. This bird generally breeds far north, although a few breed throughout more southern localities. The writer noticed a pair in the marsh near Dunnville, Ont., on the Grand River about June 1st, 1886. and was told by local sportsmen that they had been observed there for a week or two. This pair of Spoonbills remained and raised a fine brood of five young ones. Their nest, though not seen, was in the midst of a large wet marsh. The same pair returned to the same locality in May of 1887 and raised another brood, since which time they have not returned. This bird is considered by epicures as very tender and juicy.



THE SHOVELLER, SPOONBILL (*Spatula Clypeata*).



THE BLUE-WINGED TEAL (*Querquedula Discors*).

 QUERQUEDULA DISCORS (STEPHENS).

THE BLUE-WINGED TEAL.

Specific Character.—Male.—Head and neck dull plumbeous, slightly glossed with lavender purple on the side of the occiput and nape, and marked in front of the eyes by a large crescentic patch of white extending entirely across the anterior portion of the head; pileum, chin, and feathers bordering the white patches, blackish; lower parts pale reddish thickly spotted with black; the crissum uniform black; back and anterior scapulars dusky marked with crescentic or U shaped bars of pale reddish buff; lesser wing coverts and some of the outer webs of some of the larger scapulars, blue; middle coverts white for the exposed portion forming a bar across the wing; speculum bronzy green, dusky terminally, with a very narrow white tip; tertials black with a central stripe of buff; a white patch at the base of the tail on each side; axillars immaculate pure white; bill uniform black; iris brown; feet yellowish. Female.—Wings only as in the male; upper parts dusky, the feathers bordered with dull buff; rest of the body brownish gray.

Total length about 16.00 inches; extent about 25.00; wing, 7.00; culmen, 1.50; tarsus, 1.20; middle toe 1.40.

Habitat.—North America in general but chiefly the eastern Province. North to Alaska, south to Ecuador and throughout West Indies. Accidental in Europe. The Blue-winged Teal is rarely met with north of 60° north latitude and is not found throughout the whole Pacific coast. It is a very common duck throughout Ontario and breeds plentifully in the southern counties although not nearly so much so as in former years. It arrives here early in the spring, and is apparently mated when it reaches here. It makes its nest along the side of a ditch, in a grain field, fence corner, or other locality convenient to water, and lays from 8 to 12 eggs of a pale green colour. Whenever the female leaves the nest she invariably covers the eggs with down, grasses, etc. It begins its migration south about the middle of September and reaches the southern border of Ontario about the 20th, when formerly large bags were made during the day or two when the Teal dropped down to feed or rest. Its food consists of wild oats and rice, small shell fish, and insects. This bird is considered very fine for the table.

NETTION CAROLINENSIS (BAIRD).

THE AMERICAN GREEN-WINGED TEAL.

Specific Character.—Male.—Head and neck rich chestnut rufous inclosing a broad patch of soft dark metallic green on each side of the occiput, from the eye which it surrounds down the sides of the nape, where the two areas of the opposite sides touch a short nuchal crest of bluish black. The green patch bordered anteriorly and beneath by a yellowish white line, and a less distinct line of the same bordering the base of the upper mandible, extending thence back to and indistinctly following for a short distance the upper anterior portion of the green patch. Chin and upper part of the throat dull black. Front of the jugulum deep pinkish cream colour with roundish and transversely ovate spots of black. Collar round the lower neck, sides of the jugulum, sides and flanks, very delicately and beautifully undulated with black upon a white ground; outer scapulars similarly waved. Sides of the breast with a large transverse bar of plain white. Crissum rich deep cream colour bounded anteriorly and divided medially with velvety black; post femoral region waved like the flanks; rest of the lower parts plain white, sometimes tinged with cream colour. Back, scapulars, rump, wing coverts, primaries and tail, plain cinereous. Outer row of scapulars with their outer webs about half velvety, black bordered interiorly with a white line. Last row of coverts broadly tipped with deep ochraceous; speculum opaque black, narrowly tipped with white, the four or five upper feathers with their outer webs richly marked with brilliant soft metallic green varying from golden to violaceous according to the light. Bill black; iris brown; feet light flesh colour. Female.—Wings as in the male, but duller. Above cinereous dusky variegated with edgings and transverse bars of ochraceous white; rest of body dingy whitish speckled with dusky.

Total length about 14 inches; extent, 20.00; wing, 7.00 culmen, 1.50; tarsus, 1.25; middle toe, 1.30.

Habitat.—North America in general, breeding chiefly north of the United States, migrating south as far as Honduras and Cuba.

This handsome little Teal is tolerably common in southern Ontario during the spring and fall migrations, in April and September, but it has not been known to breed so far south, and if at all it must be very sparingly. In the fall it collects in large flocks and for a few days often affords good sport, however we will never see it here again so plentiful as it used to be a few years ago. At that time if a sportsman succeeded in finding a "Teal hole" he could make a great bag on account of their habit of clustering so closely together, and returning over and over again to the same place after being shot at. Its flesh is white and delicate, and on account of its being so fat is considered a great delicacy. It feeds much the same as the Blue-winged Teal. The female usually lays from 8 to 10 eggs of a white colour.



THE AMERICAN GREEN-WINGED TEAL (*Nettion Carolinensis*) 30012.



THE WOOD DUCK, SUMMER DUCK (*Aix Sponsa*).

AIX SPONSA (BOIE).

THE WOOD DUCK: SUMMER DUCK.

Specific Character.—Adult male.—Chin throat and foreneck pure white, sending off laterally two branches, the first across the cheeks, back of and nearly to the posterior angle of the eye, the second across the lower part of the neck, almost to the nape; both bars tapering toward the end, and somewhat curved or falcate in shape; a narrow white line begins at the point of the maxillary angle and is continued back on each side of the crown, widening considerably on each side of the crest; a second white line commences about half an inch behind the eye, and nearly the same distance above the end of the white cheek bar and follows the lower edge of the crest, where considerably wider than anteriorly; remainder of the head silky metallic green, violet and purple as follows: cheeks and space behind the white cheek bar soft violaceous black, in the latter region extending up to the lower white stripe but in the anterior area bounded above and anteriorly by dark metallic green, the orbital region and anterior half of the crest between the white lines metallic reddish purple, forehead, crown and posterior portion of the crest metallic green; terminal portion of the crest above, laterally, and beneath dark metallic violet. Jugulum rich purplish chestnut, with a metallic purple gloss laterally, the front and lower part marked with deltoid spots of white, growing larger toward the breast; breast and abdomen immaculate white; sides of the breast with a broad transverse bar of white and a wide black one immediately behind it; sides and flanks pale fulvous buff delicately undulated with black, the broad feathers forming the upper border, each beautifully marked with two black crescentic bars inclosing a white one; crissum dull black fading gradually into dull rusty fulvous on the anal region. Back, lesser wing coverts, and rump dark slaty brownish very faintly glossed with bronze, the wing coverts more slaty, the rump much darker, and gradually deepening into black towards the upper tail coverts, which with the tail are deep black, the latter with bronze green reflections in certain lights; a somewhat ovate patch pointed posteriorly, of rich dark metallic maroon purple on each side of the rump immediately behind the flanks; just behind this the two or three elongated lateral upper tail coverts are marked with a central stripe of deep fulvous falling gracefully over the sides of the crissum. Tertials and posterior scapulars intense black with rich velvety reflections of blue green and purple chiefly, the first in certain lights; the longest tertial tipped with a wide bar of white, the next black to the end, the third much shorter, much narrower than the rest, pointed and of a dull greenish bronze colour; middle and greater wing coverts steel blue narrowly tipped with black; secondaries (speculum) purplish steel blue narrowly tipped with white and with a narrow subterminal black bar; primary coverts slate colour; primaries with the exposed ends of the inner webs steel blue, the ends of the outer webs grayish or glaucous white, becoming slate colour basally; lining of the wing spotted with slate colour and white. Sagittate longitudinal space on the culmen and terminal nail of the bill deep polished black; an oblong space of milk white from nostril to the nail, a line or border of gamboge yellow following the basal outline of the bill, rest of bill dark purplish red, deepening into scarlet just behind the nostril; iris bright orange red; eyelids deep vermillion; legs and feet dull chrome yellow the webs and joints dusky.

Total length about 19.00 inches; extent, 29.00; wing, 9.00; culmen, 1.40; tarsus, 1.40; middle toe, 1.70.

Female.—With much plainer colours, feathers about base of the bill, space on side of head, surrounding eyes and extending back in a point, chin and whole throat, white; general colour of the rest of the body grayish brown. Total length about 17.75 inches; extent, 28.00; wing, 8.50; culmen, 1.10; tarsus, 1.35; middle toe, 1.60.

Habitat.—Whole of temperate north America, north to the fur countries, breeding throughout its range. Cuba. Accidental in Europe.

The Wood duck is by far the most beautiful and most graceful of all the North American ducks or in fact of those of any other country. It is distributed pretty generally over the North American continent from Southern Mexico to Hudson's Bay and from one side of the continent to the other and it breeds from Texas to the northern part of Ontario. It migrates to the north early in April and returns in October. When they first appear here in Ontario they are generally in pairs. It breeds very generally throughout Ontario especially the southern part of it, nesting in hollow trees near some pond or other quiet water. They are very fond of a quiet secluded spot and have been known to return for many years to the same nesting tree. The full set of eggs is from 10 to 12 of a shiny cream colour. When the young birds are hatched it is said the mother deposits them on the ground by carrying them down in her bill. This handsome duck is not nearly so plentiful as in former years, and like many other birds which are among our most beautiful objects in nature is doomed to extinction, if some better effort be not made to prevent their slaughter. The Wood duck feeds chiefly on insects, seeds, and leaves of plants, acorns, etc. It is much sought after by sportsmen not only on account of its beautiful appearance but also for the table.



THE SCAUP DUCK, BLUEBILL (*Fulix Marilla*).

FULIX MARILLA (BAIRD).

THE SCAUP DUCK: BLUEBILL.

Specific Character.—Head, neck, and jugulum black, the first with a greenish gloss; back and scapulars white, irregularly undulated with zigzag lines of black wing coverts dusky finely grizzled with grayish white; secondaries white tipped, and sometimes narrowly edged with black; tertials black with very faint bottle green reflections; primary coverts dusky black; primaries similar but the inner quills pale grayish on the outer webs, except at ends the gray growing white on the shorter feathers; rump, upper tail coverts, tail, and crissum, dull black. Lower parts between the jugulum and crissum white, the posterior portion and sometimes the sides and flank zigzagged with dusky. Bill pale blue or bluish white, in life the nail black; iris bright yellow; legs and feet pale slate.

Female.—Head and neck sepia brown, the anterior portion of the former all round the base of the bill white; jugulum, anal region, and crissum, pale grayish brown fading gradually into the white of the breast and abdomen; sides and flanks deeper brown; above brownish dusky, the back and scapulars but faintly if at all grizzled with white; wings much as in the male.

Total length about 18 to 20 inches; extent, 29.50 to 35.50; wing, 8.50; culmen 1.85; tarsus, 1.50; middle toe, 2.30.

Habitat.—Entire Northern Hemisphere; in America breeding far north.

The Bluebill is a very widely distributed species being found not only throughout the whole of North America, but also throughout Europe and Asia, as far east as China and Japan. It breeds in the Arctic regions passing through Ontario in April, loitering on its way for a week or two until well into May, when they nearly all disappear. Some few pairs, however, stay and breed in southern Ontario. It has been known to breed at the St. Clair Flats, and on the Grand River, and probably in other places as far south. In the month of October and November it often collects in large flocks on its way south staying in Ontario waters until frozen out. It is much hunted on account of its size and fair fitness for the table. It obtains the principal part of its food by diving in deep water for the roots of various plants. In Ontario it is not nearly so plentiful as formerly.

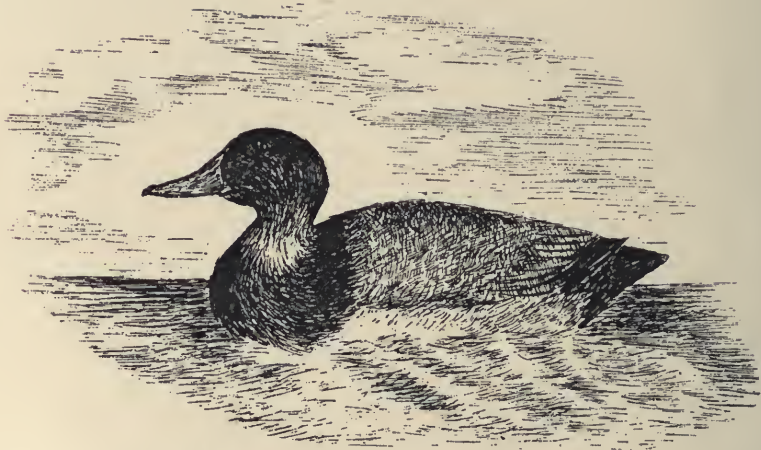
FULIX AFFINIS (BAIRD).

THE LESSER SCAUP DUCK : LITTLE BLUEBILL.

Specific Character.—Entirely similar to F. Marilla, but smaller.

Total length about 16.00 inches, extent, 25.00 ; wing, 7.75 ; culmen, 1.58 ; tarsus, 1.30 ; middle toe, 2.00.

Beyond the smaller size there is probably no difference which is constant. The history of the preceding duck will apply to this one as there seems to have been formerly a good deal of confusion as to its identification as a good variety. It is barely possible that the observations as to the Scaup duck breeding in southern latitudes may apply to this duck and not to the larger variety. However it is considered by ornithologists as a good variety with habits and distribution much the same as those of the Greater Bluebill. It is sometimes called the Marsh Bluebill on account of its being more frequently found in marshy places while the other prefers deep water.



THE CANVASBACK DUCK (*Aethya Vallisneria*).

AETHYIA VALLISNERIA (BAIRD).

THE CANVASBACK DUCK.

Specific Character.—Bill long and narrow the end much depressed, with the nail scarcely decurved, the base high with the culmen gradually sloping and scarcely concave; culmen nearly as long as the middle toe (without claw) and about three times the greatest width of the maxilla. Head and neck chestnut rufous the former brownish dusky (sometimes quite blackish) anteriorly and on top; jugulum and anterior part of back, lower part of rump, upper tail coverts, and posterior part of crissum black; back, scapulars, flanks, sides, and anal region white, finely and delicately vermiculated with dusky; breast and abdomen immaculate white. Wing coverts deep ash gray finely sprinkled with white, secondaries ("speculum") lighter more bluish gray, the upper feathers edged with black; tertials like the longer scapulars; primaries slate colour the inner quills more cinerous, except at the ends where dusky, tail dusky; bill entirely greenish black; iris carmine red; feet bluish gray.

Female.—Head, neck, jugulum, and anterior part of the back raw umber brown; a post ocular space and the foreneck whitish; the chin, throat, and cheeks tinged with fulvous; wings as in the male, but coverts almost uniform gray; back, scapulars, sides, and flanks, with only the exposed ends of the feathers vermiculated with white and dusky, the remainder being grayish brown. Bill greenish black; iris brownish red the feet plumbeous.

Total length about 20.00-22.00 inches; extent 30.00; wing 9.00; culmen 2.30; tarsus 1.70; middle toe 2.60.

Habitat.—Nearly the whole of North America breeding from the North Western States northward to Alaska; south in winter to Guatemala.

This duck so famed for the qualities of its flesh, is exclusively found in North America. It is very like the redhead in appearance and habits but is superior for the table. It derives its name partly from the plant Valissneria or wild celery, upon which it is very fond of feeding whenever it can be found, and it is then that its flesh is so much prized; at other times it is said not to be much superior to that of the Redhead or Bluebill. In Ontario they are never now very plentiful, being found late in the season in small numbers at the Rondeau, St. Clair Flats, and Long Point, but like the Redhead are getting very scarce. The Canvasback duck like the Redhead and Bluebill is hunted in a peculiar way upon the Chesapeake by what is known as "toling." The hunter has a kind of poodle dog trained for the purpose, and having selected a spot where the ducks can swim very close to the shore the hunter having secreted himself, makes his dog run up and down the shore in sight of the birds which gradually approach the shore, apparently out of curiosity, as they do so the dog is trained to gradually recede into the grass and to hide himself, the ducks coming quite close up to the shore when the hunter seizes his opportunity. Several thousands of ducks have been known to crowd in towards the shore in a solid mass out of sheer curiosity. On the Rondeau they are taken by cutting a large hole in the ice and piling the blocks of ice about it and among which the hunter properly clad is secreted.

The Canvasback breeds in the far north principally and lays from 7 to 10 eggs of a grayish green colour.

AETHYIA AMERICANA (BAIRD).

THE REDHEADED DUCK.

Specific Character.—Bill much shorter than the middle toe (without claw) broad, the end moderately depressed and with the nail decidedly decurved, the culmen about two and a half times the greatest width of the maxilla and decidedly concave.

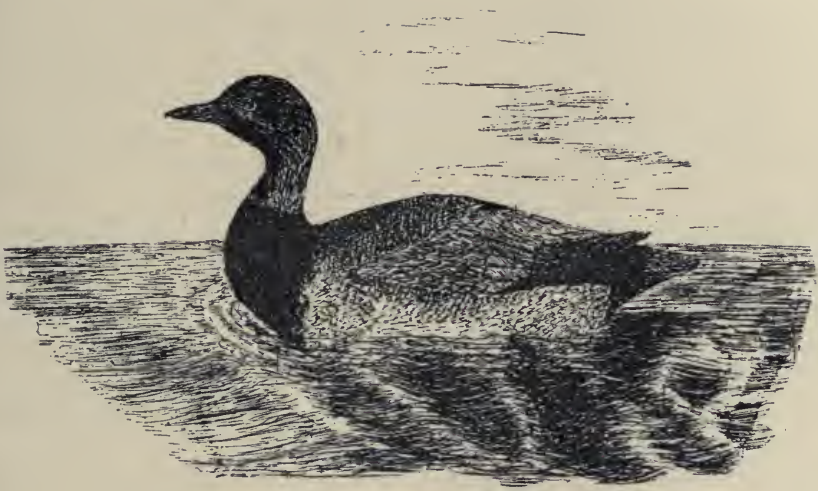
Male—Head and upper half or more of the neck rich reddish chestnut, the latter glossed with reddish purple; lower part of the neck, jugulum anterior part of the back, lower part of the rump, upper tail coverts and crissum, black; back, scapulars, sides and flanks, densely vermiculated with white and dusky in about equal proportion; anal region similarly but more faintly marked; entire abdomen immaculate white; wing coverts deep plumbeous gray, faintly and minutely sprinkled with white; secondaries (speculum) pale bluish gray the upper feathers edged with black, the others narrowly tipped with white; primaries dusky, the inner quills slaty gray except at the ends; tail dusky; bill pale blue, the end black; iris red; feet bluish gray.

Female—Head and neck grayish brown darkest above; anterior part of the head lighter, almost white on the chin and upper part of the throat; jugulum, sides, and flanks, dull grayish brown, the feathers tipped with fulvous; wings as in the male, but their coverts plain slate colour; back and scapulars grayish brown, the feathers with paler tips; rump, upper tail coverts, and tail, grayish brown; anal region paler; longer lower tail coverts whitish. Bill plumbeous, the end black; iris yellow; feet plumbeous.

Total length about 20.00 inches; extent, 33.00; wing about 8.50; culmen, 2.05; tarsus, 1.60; middle toe, 2.35.

Habitat.—The whole of North America, breeding from central California and Maine to the fur countries; Bahamas.

Prof. Baird says The American Redhead duck is quite distinct from the Pochard of Europe, though resembling it very closely Audubon considered it to be identical. The Redhead duck is pretty generally distributed throughout North America, breeding in high latitudes down to 44 degrees and in the winter going as far south as Mexico. Richardson says that this species breeds in all parts of the fur countries from the 50th parallel to their most northern limits. It is common in autumn on Chesapeake Bay and other points along the Atlantic coast, and is here often found associating with the Canvasback which it so closely resembles, in fact in the New York markets it is frequently sold as the genuine Canvasback and indeed while feeding on the wild celery its flesh is not much inferior to that of that famous duck. Formerly the redhead was quite a plentiful species in Ontario, but of late years its numbers appear to be diminishing rapidly, in fact at some stations where large numbers of them used to be shot, not a single specimen has been taken during the last two shooting seasons. This fact may be largely due to the legal existence of spring shooting in some of the neighboring states and the netting of them in the southern states. Like the Bluebill they decoy well and are thus tolerably easily led into traps baited with corn of which they are very fond. The Redhead reaches Ontario early in April and returns late in October and November staying till the ice forms and in some instances on our open lakes all winter. The female lays from 8 to 10 eggs of a grayish white colour.



THE REDHEADED DUCK (*Aethya Americana*).

CLANGULA GLAUCION AMERICANA.

THE AMERICAN GOLDEN-EYE.

Specific Character. —Male—Head and upper half of neck black glossed with green, varying to violet, a roundish white spot between the rictus and the eye, but not reaching to the latter; back, inner scapulars, tertials, rump, and upper tail coverts, deep black; lower half of the neck (all round), lower parts; outer scapulars, posterior, lesser, middle, and greater wing coverts and secondaries, pure white; anterior lesser wing coverts and outer edges of scapulars and flank feathers and concealed portions of greater coverts deep black; primaries blackish dusky; tail dull slate; sides of the anal region behind the flanks clouded with grayish. Bill deep black; iris bright yellow; feet orange yellow with dusky webs.

Adult Female.—Head and neck hair brown of greyish brown, rather than purplish sepia or snuff brown, and white on the wing usually not interrupted by a distinct bar.

Total length about 18.50-20.00 inches; extent 31.00; wing about 9.25; length of bill from tip to basal angle 1.85; tarsus 1.60; middle toe 2.50. Female is less in size.

Habitat.—The whole of North America breeding from Maine and British provinces northward, south to Cuba in the winter. The Golden-eye, or Whistler, as it is commonly called from the noise it makes with its wings when flying, is distributed pretty generally over North America. It is quite common in Ontario especially in the late autumn, and it probably remains on open waters all winter in Southern Ontario. It feeds on fish, shellfish, molluscs, marine vegetables, and seeds. Its flesh is consequently fishy and almost unfit for food. It breeds principally to the north and the nest is, generally like the Woodduck's, in a hole in a tree where the female lays 6 or 8 eggs. It is a strong flyer and an expert diver and not easily shot.

CLANGULA ALBEOLA (STEPHENS).

THE BUFFLE-HEADED DUCK : BUTTERBALL.

Specific Character.—Adult male.—Head and upper half of the neck rich silky metallic green, violet purple, and greenish bronze, the last prevailing on the lower part of the neck, the green on the anterior part of the head, the purple on the cheeks and crown; a large patch of pure white on the side of the head extending back to and around the occiput; lower half of the neck, lower parts generally, wing coverts, secondaries, and outer scapulars pure white, the latter narrowly, and the feathers of the flank more widely edged with black; posterior parts of body tinged beneath with pale ashy gray; upper tail coverts light hoary gray; tail slaty gray the shafts black; bill bluish, plumbeous dusky on the nail and at base; iris very dark brown; legs and feet pinkish or lilaceous white.

Total length about 14.50 inches; extent 24.50; wing 6.75; culmen 1.10; tarsus 1.30; middle toe 1.90.

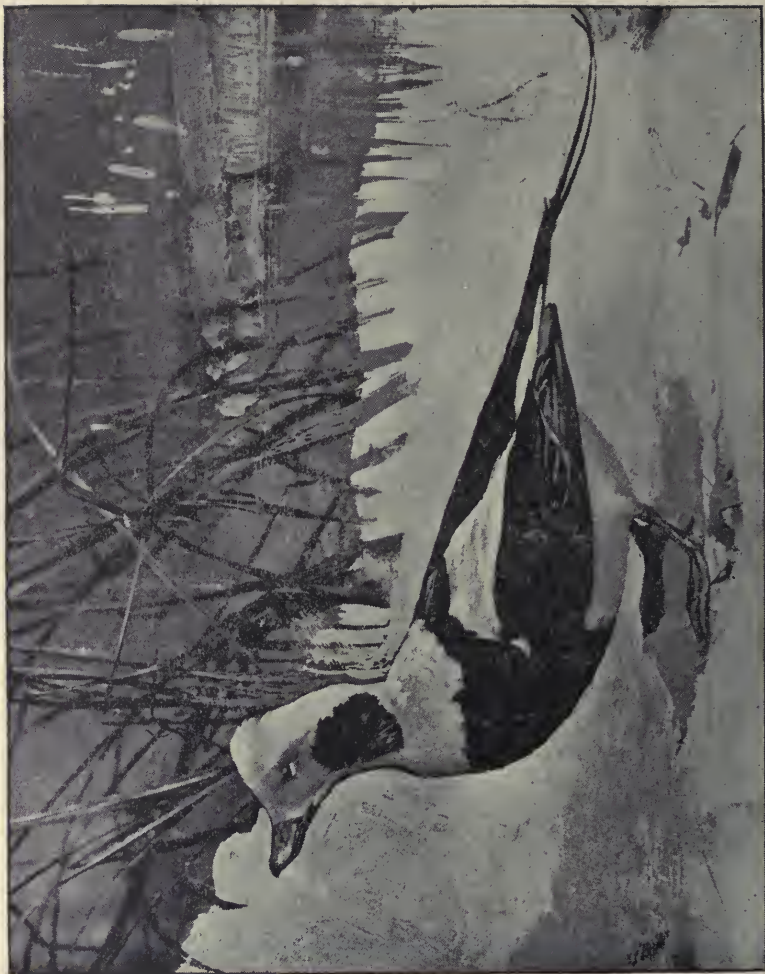
Adult female—Head, neck and upper parts generally dusky grayish brown; an oblong or somewhat ovate white longitudinal patch on the auricular region, and the inner secondaries (sometimes also the greater wing coverts except at the ends) white; lower parts white tinged with brownish gray posteriorly, anteriorly, and laterally. Bill dusky inclining to plumbeous at the end and along commissure; iris very dark brown; legs and toes dilute lilac pink, the webs and joints darker. Length about 12.50 inches.

Habitat.—North America, breeding northerly, migrating south in winter to Cuba and Mexico.

The buffle-headed duck is essentially a North American bird, being only accidental, if found elsewhere. It is a handsome little fellow in its spring plumage and is quite abundant in all the waters of Ontario, during its migrations. It is an expert diver, finds its food almost anywhere, and becomes very fat, hence the name "Butterball" but as it is so small it is not much sought after, besides its flesh is fishy. The Indians call it the "Spirit Duck." Its food consists of small fish. This bird also breeds in the hollow of a tree and the female lays from 6 to 10 eggs of an ivory white colour.



THE BUFFLE-HEADED DUCK, BUTTERBALL (*Clangula Albicollis*).



THE LONGTAILED DUCK, OLD SQUAW (*Harelda Harelda*).

HARELDA HYEMALIS (BAIRD).

THE LONGTAILED DUCK: OLD SQUAW.

Specific Character.—Adult, male—Winter—Forehead, crown, occiput, nape, chin, throat, lower part of the neck all round, and upper part of the jugulum and back, white; lores, cheeks, and orbital regions light mouse gray, the eyelids white, a large oblong space covering the sides of the neck, black, becoming grayish brown in its lower portion. Middle of the back, rump, upper tail coverts, tail, wings, lower part of the jugulum, whole breast and upper part of the abdomen black; the pectoral markings are very abruptly defined both anteriorly and posteriorly, the latter with a strong convex outline. Scapulars glaucous white or very pale pearl gray. Basal half of the bill black, the terminal portion orange yellow with the nail bluish gray; iris bright carmine; feet light plumbeous, the webs dusky and claws black.

Adult female in winter.—Head, neck, and lower parts, chiefly white; forehead medially and crown dusky; auricular region, chin and throat tinged with the same; jugulum light dingy gray. Upper parts dusky brown, the scapulars bordered with grayish fulvous, or light raw umber brown, some of the feathers tipped with pale ashy.

Total length about 23.00 inches; extent 30.00; wing 8.50; culmen 1.10; tarsus 1.35; middle toe 1.90. Female smaller.

Habitat.—Northern Hemisphere. In America south to the Potomac and Ohio rivers. This bird is known by a number of names such as Coween, Long-tailed Duck, Old Wife, Old Squaw, South-south Southerly, the latter name from its jabbering note. It is distributed over nearly the whole of North America and is very common throughout Ontario remaining upon its southern waters most of the winter. It passes north early in the spring to breed, the female making her nest near the edge of the water and laying from 6 to 12 eggs. It is a very handsome bird, but is utterly useless for the table. Its food being chiefly fish and water insects its flesh is black, rank, and fishy. The Coweens assemble on the Niagara river in large numbers, and on a still morning may be heard for a long distance uttering their peculiar gabbling cry.

OEDEmia AMERICANA (COUES).

THE AMERICAN BLACK SCOTER.

Specific Character.—Entire plumage uniform deep black, the neck faintly glossed with dull violaceous, the feathers somewhat distinctly defined; basal half of the maxilla except a stripe along the edge of the bill bright orange, the remainder of the bill black; iris hazel; legs and feet dull black. "The bulging part of the upper mandible is bright orange, paler above that colour extending to a little before the nostrils; the rest of the upper mandible including its basal margin to the breadth of from three to two-twelfths of an inch, black as is the lower mandible; feet brownish black; iris brown." (Audubon).

Female.—Above dull grayish brown, the feathers of the back and scapulars tipped with lighter; lower, parts lighter, the pale tips broader, though lacking on the posterior portions; lateral and lower parts of the head and neck nearly uniform very pale grayish brown, quite abruptly defined against the uniform dark brown of the pileum and nape. Bill entirely black.

Total length about 17.00 to 19.00 inches; extent 29.00 to 34.00; wing 8.75 to 9.50; culmen 1.75; tarsus 2.00; middle toe 2.50. Female smaller.

Habitat.—Coasts and larger inland waters of Northern North America, south to the Great lakes, New Jersey, and California.

Sir John Richardson says of this duck that it feeds almost exclusively in the open sea, that its flesh is always oily and strongly flavoured, that it frequents the shores of Hudson's Bay, breeding there between the 50th and 60th parallels of latitude. In Ontario we know it as one of the spring and fall migrants; as it is not fit for food it is seldom taken.



THE VELVET SCOTER (*Melanetta Velvetina*).

MELANETTA VELVETINA (BAIRD).

THE VELVET SCOTER.

Specific Character.—Adult, male—Base of the culmen elevated into a prominent knob; lateral base of the maxilla sunken beneath the feathering of the lores. Plumage uniform brownish black. A crescentic spot beneath the eye and extending backwards for half an inch or more, secondaries, and greater wing coverts white. Knob of the bill with base, and margin of the maxilla, black; sides of the bill red lead fading into orange; nail vermilion; the anterior flat portion of the upper mandible whitish; iris, white tinged with straw yellow; legs scarlet with black webs, and a tinge of black on the joints.

Female.—Uniform grayish fuliginous, the wings darker; white speculum as in the male, but no white about the head, or with faint indication of white spot at the base of the maxilla and behind the eye.

Total length 19.75 to 22.50 inches; extent 36.00 to 40.00; wing 10.75; commissure 2.82; tarsus 2.08.

Habitat.—Northern North America, chiefly maritime, but occurring also in various inland waters; south in winter to the middle states, greater lakes, and southern California.

This duck is familiar in Ontario, occurring in large flocks on our great lakes and rivers in the spring and autumn. In the spring they reach here about the middle of April and after staying a couple of weeks go on to the north where they breed. They return late in October and November. On the seacoast this bird is much hunted, but its flesh is not good and must be bought only by those who do not know what a good duck is.

It nests on the ground and lays from 6 to 10 eggs of a pale cream colour.

ERISMATURA RUBIDA (BONAP).

THE RUDDY DUCK: SPINE-TAILED DUCK.

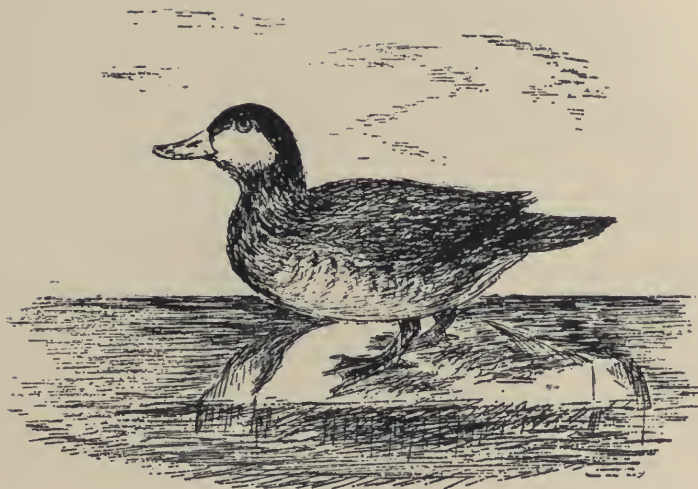
Specific Character.—Adult—Pileum and upper half of the nape uniform black; entire side of the head, below the eyes including the malar region and chin pure white; rest of neck, entire upper parts, sides and flanks, rich chestnut rufous or purplish ferruginous, wing coverts and middle of the rump, dusky grayish brown, minutely mottled with paler remiges dull brownish dusky; rectrices brownish black, shafts deep black; lower part white on the surface, but the concealed portions of all the feathers dark brownish gray, showing when the feathers are disarranged, and in midsummer specimens completely exposed by abrasion of the tips of the feathers; jugulum strongly washed with fulvous buff, this sometimes invading the abdomen. Lower tail coverts entirely white to the roots of the feathers. Bill and edge of the eyelids grayish blue; iris hazel; feet dull grayish blue, webs inclining to dusky; claws grayish brown.

Female.—Top of the head down to below the eyes, and upper parts generally, dusky grayish brown, minutely freckled with pale grayish fulvous (more reddish in the head) remainder of the head dirty grayish white, crossed longitudinally by a strip of speckled dusky; neck pale brownish gray fading into the white of the chin.

Length 14 to 17 inches; wing, 5 to 6; tarsus, 1.25.

Habitat.—The whole of North America breeding throughout its range.

The Ruddy duck like the Buffle-head is peculiar to the North American continent and there it is found from Central America to the Arctic regions where the bulk of them goes to breed early in April returning about the middle of October, or a little later when they appear on our Ontario waters in great numbers. Although it is not a good bird for food, large numbers are shot, so easily are they taken; this is mainly on account of the peculiar way it has of taking to flight, scuttling along the top of the water for some distance before it gets under full speed; it lets the hunter paddle up pretty close, and then rising it affords an easy shot. Its food consists of small fish, shell fish, water insects, etc., consequently its flesh is soft, dark and fishy. A few probably breed in Southern Ontario.



THE RUDDY DUCK, SPINE-TAILED DUCK (*Erismatura Rubida*).

SCOLOPACIDÆ—SNIPE FAMILY.

This family includes a great variety of forms, such as the least Sandpiper, the smallest, to the great Long-billed Curlew, the largest. They are very widely distributed over the whole world, and Ontario comes in for her fair share. We have here in Ontario the following forms which require the protection of our game laws, viz :—

- Philohela Minor*,—American Woodcock.
- Gallinago Wilsoni*,—American, or Wilson's Snipe
- Macrorhamphus Griseus*,—Red-breasted Snipe.
- Tringa Maculata*,—Pectoral Sandpiper.
- Limosa fedoa*,—Marbled Godwit.
- Limosa haemastica*,—Hudsonian Godwit.
- Totanus Melanoleucus*,—Telltale, Greater Yellow-legs.
- Totanus Flavipes*,—Yellow-legs.
- Bartramia Longicauda*,—Upland Plover, Field Plover.
- Numenius Longirostris*,—Long billed Curlew.
- Numenius Hudsonicus*,—Hudsonian Curlew.
- Numenius Borealis*,—Eskimo Curlew.
- Charadrius dominicus*,—Golden Plover.

The last is not a snipe but a plover.

PHILOHELA MINOR (GRAY).

AMERICAN WOODCOCK.

Specific Character.—Bill long, compressed, punctulated, and corrugated near the end; upper mandible longer than the under and fitted to it at the tip; wings moderate, three outer quills very narrow; tail short; legs moderate; eyes inserted unusually distant from the bill.

Adult.—Occiput with three transverse bands of black, alternating with three much narrower ones of pale yellowish rufous; upper parts of body variegated with pale ashy rufous, or yellowish red of various shades, and black; large space on front and throat reddish ashy; line from the eye to the bill and another on the neck below the eye, brownish black; entire under parts pale grayish rufous, brighter on the sides and under wing coverts. Quills ashy brown, tail feathers brownish black tipped with ashy, darker on the upper surface, paler and frequently white on the under; bill light brown, paler and yellowish at the base; legs pale reddish.

Total length about 11 inches; wing, 4.80-5.70; tail, 2.25; bill, 2.50 to nearly 3.00 tarsus, 1.25; middle toe, 1.37.

Habitat.—During the summer this favorite game bird is distributed pretty generally over the southern part of Ontario. It is not common as far north as Muskoka nor so far east as Ottawa. South it is found over the greater part of eastern North America, and as far west as Dakota.

The Woodcock is a migratory bird arriving in Ontario often early in April, when it almost at once proceeds to take up housekeeping. Its lovemaking is much the same as that of other birds of this family. While the female sits upon the ground, the male proceeds to show his agility, etc., rising high in the air by a spiral sort of motion, occasionally uttering its notes, and after soaring about in an irregular manner, it descends rapidly, making a whirring noise like that of the snipe or night hawk under similar circumstances. The female chooses generally a spot outside of the deep swamp for her nesting place, such as on the edge of a clump of bushes or swale in a meadow, sometimes on the bare ground near a stump or bush in a field where, with but little nest, she lays three generally, but sometimes four eggs. Both birds take turns in "setting" and they will allow themselves to be almost trampled upon before they will leave the nest.

It seldom flies or feeds except at night. It is a ground bird and its food is chiefly composed of earth worms, larvæ and insects, which it procures by pushing into the earth its long and very sensitive bill, by which the least motion is detected. It is a very voracious bird, and in confinement has been known to eat its weight of angle worms in a day.

It is much esteemed for the table and brings a high price in the markets, hence the avidity with which it is hunted. Formerly it was very plentiful in some of the southern counties of Ontario, but of late years is becoming very scarce, and if not carefully protected, will soon be among the extinct birds. It is terribly slaughtered during the winter in some of the southern states, where it is hunted at night by means of torches. During October there is probably no game bird which the real sportsman so loves to hunt, for what with its sudden rise, its cheery whistle and erratic flight, it makes most exciting sport. Its weight is never more than nine and one half ounces, seldom eight, usually not more than seven. The usual weight of the European woodcock is fourteen ounces.



THE AMERICAN WOODCOCK (*Philohela Minor*.)



WILSON'S SNIFE (*Gallinago Wilsoni*)

GALLINAGO WILSONI (BONAP).

WILSON'S SNIPE.

Specific Character.—Bill long, compressed, flattened and slightly expanded toward the tip, punctulated in its terminal half; wings rather long; legs moderate; tail short. Entire upper parts brownish black; every feather spotted and widely edged with light rufous, yellowish brown or ashy white back and rump transversely barred and spotted with the same; a line from the base of the bill over the top of the head. Throat and neck before, dull reddish ashy; wing feathers marked with dull brownish black, other under parts white with transverse bars of brownish black on the sides; axillary feathers, under wing coverts and under tail coverts and quills brownish black; outer edge of first primary white; tail glossy brownish black, widely tipped with bright rufous, paler at the tip and with a subterminal narrow band of black; outer feathers of the tail paler frequently nearly white, and barred with black throughout their length; bill brown (greenish grey in life) paler at base and darker toward the end; legs dark brown (light greenish grey in life).

Total length about 10.50 to 11.50 inches; extent, 16.50 to 17.50; wing, 5.00 to 5.60; tail, 2.25; bill, 2.50 to 2.60; tarsus, 1.25.

Habitat.—The whole of north and middle America, breeding from the northern United States northward, migrating in the winter as far south as New Grenada.

This bird is quite common in Ontario during its spring and fall migration, occurring in low meadows and along the marshy banks of streams. Although not nearly so common as in former years, it still returns to its old haunts or "snipe beds," where it is eagerly sought by sportsmen, who generally think the sport only second perhaps to that of woodcock shooting.

It reaches here in Ontario early in April, remaining upon its feeding grounds for a week or so, where it carries on its lovemaking and pairing. The female sits upon a bog or soft part of a meadow, and while she clucks something like a hen the male is performing gyrations in the air, swooping down to her, then rising suddenly until he thinks she is satisfied of his prowess and beauty, which she evinces by her contented cluck.

As the male bird swoops down in the air, a peculiar rumbling noise is made by fixing his wing feathers in a certain position as has been described of some other birds. Towards the end of April all of these birds are mated and most of them move northward to their breeding grounds; a few, however, remain and breed throughout Ontario. The nest is placed always on the ground, and three or four eggs are laid, generally three. The ground colour of the eggs is light brown covered with dark sepia coloured spots, smaller at the small end than at the larger. The young are able to run as soon as hatched. It is said the snipe will light on trees sometimes, but only when they are disturbed during the breeding season. Its food consists largely of worms, larvæ and small insects and snails. The snipe has a peculiar flight; when first flushed it rises with its peculiar cry "scaipe," but three or four feet from the ground flying in a twisting zig-zag manner, sportsmen generally expect three of these twists before it settles down to a steady flight, and it is just after the third twist that the sportsman generally tries his luck. It requires a steady shot to make a good bag. This bird is sometimes called the English snipe, but many good observers say that although they are much alike, the colours are somewhat different; besides, the English bird has only 14 feathers in its tail while the American snipe has 16.

MACRORHAMPHUS GRISEUS (LEACH).

THE GRAY SNIPE · REDBREASTED SNIPE, DOWITCHER.

Specific Character.—About the size of *Gallinago Wilsoni*. Shaft of the first primary strong, pure white; axillars, tail coverts, and lower part of rump, white barred or transversely spotted with slate colour; upper part of rump white usually immaculate; tail slate coloured or dusky barred with white, (or in summer adult with pale cinnamon on middle feathers). In summer brownish black above variegated with bay; below brownish red variegated with dusky; a tawny superciliary stripe and a dark one from the bill to the eye. In winter belly and anal region white, usually unmarked; rest of plumage uniform ash gray, somewhat mixed with white on breast and sides; a whitish superciliary stripe and wing coverts bordered with white. Wing, 5.50; bill, 2.50; tarsus, 1.35; culmen, 2.30; middle toe .95.

Habitat.—Atlantic coast of North America, breeding in the region about Hudson's Bay.

Formerly the Redbreasted snipe was quite common, being generally seen in small "wisps." Wilson reports that it occurred in his time in large flocks. Of late years, however, it is not found in any numbers in Ontario.

ACTODROMAS MACULATA (BAIRD).

THE PECTORAL SANDPIPER.

Specific Character.—Above light clay colour, the crown back, scapulars and tertials, washed with light rufous or rusty ochraceous; the feathers black centrally, producing conspicuous streaks, which widen into spots on the scapulars and back; rump and middle upper tail coverts brownish black; lateral upper tail coverts white with dusky shaft streaks; middle tail feathers dusky edged with lighter; other rectrices pale brownish gray, bordered with white. Wing coverts light grayish brown with paler borders and darker centres; a light superciliary stripe, and a darker loreal one. Cheeks, sides of neck, whole jugulum, and breast pale clay colour or light grayish buff, streaked; sides sparsely streaked. Remaining lower parts immaculate white. Basal half of bill dull greenish yellow.

Total length about 9.00 inches; wing about 5.00; culmen, 1.10; tarsus, 1.00; middle toe, .90.

Habitat.—The whole of North and the greater part of South America. Breeds in the Arctic regions.

This Sandpiper, variously called by sportsmen "Jack snipe," "Grass snipe," "Short-neck," etc., is generally found where you may expect to find Wilson's snipe, but in smaller numbers. It is also commonly found in the autumn or fall wheat fields when the ground is moist and rich. It flies very much like a snipe, and is always eagerly hunted by the sportsman. In the fall it is generally very fat and is a delicious morsel. It feeds on small insects, shell fish or small snails, and it frequently, like the snipe, bores for its food.

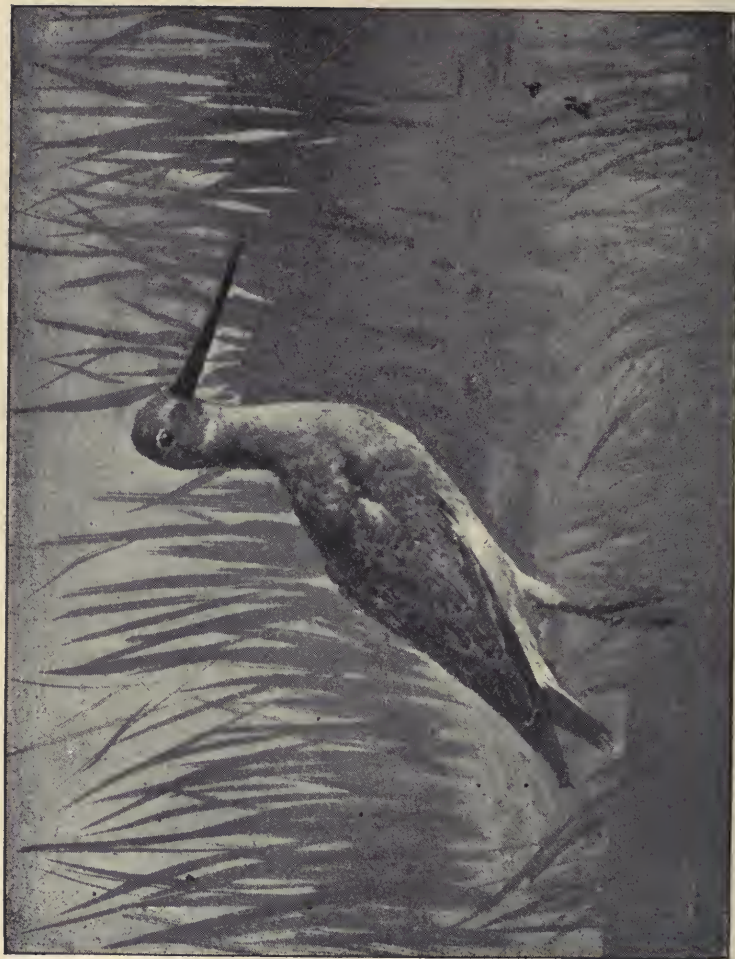
LIMOSA FEDOA (BAIRD).

THE MARBLED GODWIT.

Specific Character.—Bill long, curved upwards; both mandibles grooved; wings long; tail short; legs long; tibia with lower half naked; toes rather short, margined and flattened underneath: the outer and middle toes united by a rather large membrane. Entire upper parts variegated with brownish black and pale reddish, the former disposed in irregular and confluent bands, and the latter in spots and imperfect bands; in many specimens the black colour predominating on the back and the pale red on the rump and upper tail coverts. Under parts pale rufous, with transverse lines of brownish black on the breast and sides; under wing coverts and axillaries darker rufous; outer webs of primaries dark brown; inner webs light rufous; secondaries light rufous; tail light rufous with transverse bars of brownish black. Bill dull flesh colour in its basal half, rest blackish brown; iris brown; feet bluish gray.

Total length about 18.00 inches; wing, 9.00; bill, 4.00 to 5.00; tarsus, 3.00.

Habitat.—Throughout North America from the Atlantic to the Pacific coast; it has not been known to go very far north to breed, but its nests have been found in Ohio, Wisconsin, Iowa, Minnesota, Kansas, etc.; no record of its breeding in Ontario. The Marbled Godwit is a migratory bird and it is during its fall migrations that it is of interest to Ontario sportsmen, although it is not met with so often now as formerly. It is highly praised as a game bird by epicures, for its flesh is tender and juicy. Its food consists of leeches, worms, larvæ and snails. It winters in Central America and the West Indies.



THE HUDSONIAN GODWIT (*Limosa Hemastica*).

LIMOSA HAEMASTICA (COUES).

THE HUDSONIAN GODWIT.

Specific Character.—Smaller than *L. fedoa*, above blackish brown, irregularly spotted and barred with pale ochraceous, the rump plain brownish black; upper tail coverts immaculate white; wing coverts and shorter quills plain dark brownish gray; primaries brownish black, their shafts white. Lower parts chestnut rufous narrowly barred with brownish black, the feathers of the belly, etc., often tipped with white. Tail black with the base and tip (narrowly) white. Lining of wings and axillaries plain smoky black.

Habitat.—Eastern North America and the whole of Central and South America. Breeds only in high latitudes. This bird is not common now being more seldom seen than the Marbled Godwit. It is, however, taken at the St. Clair Flats occasionally, and on the Grand River near Dunnville, where several good specimens of the Marbled Godwit have also been taken in the autumn.

TOTANUS MELANOLEUCUS (VIEILL).

TELLTALE: GREATER YELLOW-SHANKS.

Specific Character.—Above, variegated with slate black, pale grey and white, the former predominating, the latter in the form of spots along the edge of the feathers, including the wing coverts and tertials; crown and nape grayish white, widely streaked with dusky; upper tail coverts white, irregularly barred with the same; primaries, plain blackish slate; tail white, all the feathers barred with dusky, the middle feathers grayish barred with dusky, the latter sometimes obsolete. Head, neck and lower parts, white; only the abdomen and throat immaculate; lores, cheeks, malar region, auriculars, and neck all round, streaked with dusky; breast, sides and flanks, barred or transversely spotted with dusky; the bars more saggitate on the crissum; bill, black; iris brown; legs and feet, deep yellow tinged with olive in young.

Total length about 14 inches; wing, 7.50; culmen, 2.20; tarsus, 2.50; middle toe, 1.40.

Habitat.—America in general; but breeding only far north short of the Arctic regions. In winter south to Chili and Buenos Ayres.

The "Telltale" is a very common bird in Ontario during its spring and fall migrations, and large numbers of them are shot by sportsmen in wet meadows and along the shores of watercourses. It is a fine gamy bird, and is eagerly sought for by hunters. In the spring it reaches Ontario in April, and remains a week or two before proceeding north to its breeding grounds. On its return in September it remains longer and then affords good shooting. The Telltale is a very vigilant bird, and has received his name from the fact that no sooner does he discover the fowler than he utters his loud whistle "tell tale," rapidly repeated as he rises in the air, and this proves such a good warning to all the other Greater Yellow-legs and vigilant ducks in the neighbourhood, that they at once take to flight, much to the disgust of the gunner.



THE TELLTALE, GREATER YELLOW SHANKS (*Totanus melanoleucus*).



TOTANUS FLAVIPES (VIEILL).

YELLOW LEGS: LESSER YELLOW SHANKS.

Specific Character.—Very similar to *T. melanoleucus*, but smaller and more slender. Bill rather longer than head, straight, slender, rather compressed; wing, long, pointed; tail, short; legs, long, lower half of tibia naked; toes, moderate, slender margined; the outer and middle united at the base; above ashy, mixed with ragged blotches of black, this having a tendency to form regular transverse bars on the secondaries and scapulars. Crown and nape with longitudinal streaks of black on a grayish white ground. Upper tail coverts pure white with transverse bars of dusky; tail, white; with middle feathers ashy, and all with transverse rather narrower bars of ash. Primaries and their coverts, plain dusky black. Lower parts, white; the jugulum and breast densely streaked with blackish, and the sides marked with more transverse markings of the same color.

Total length about 10.50 inches; extent, 20.00; wing, 5.50; culmen, 1.40; tarsus, 2.00; bill, black; iris dark brown; legs and feet, bright yellow.

Habitat.—The whole of America, breeding in the sub-Arctic regions, migrating south to Buenos Ayres and Chili. This well known "Yellow-legs" is very common throughout Ontario during its spring and fall migrations, being observed on the muddy flats and marshy shores of our rivers and inlets. It lives on larvæ and small crustaceans, upon which it becomes very fat; and as it is often shot with snipe, it is considered equally good for the table. It passes north during April or early in May, and returns during September. Like the greater "Yellow-legs," it is fond of wading about in pools or the edge of streams for its food, sometimes going completely under the water for a moment.

 BARTRAMIA LONGICAUDA (COUES).

BARTRAM'S TATTLER: FIELD PLOVER.

Specific Character.—Bill about as long as the head, rather wide and flattened at the bases, lightly curved at the tip; nostrils with a large membrane; nasal groove, long; wings, long; tail, long for this group; legs, moderate or rather long; lower half of the tibia naked; toes, moderate, the outer and middle united by a membrane, inner and middle free to the base; hind toe, small; above, grayish brown, the feathers paler and more ochraceous towards their edges, spotted and barred with black; head and neck, except throat, streaked with blackish; crown, blackish, divided by a mesial line of buff; throat, belly and crissum, plain buffy white; axillars, pure white and clear dusky slate in regular bars of nearly equal width; tail feathers, except middle pair, creamy buff broadly tipped with white, crossed by a broad subterminal black spot, and with a few irregular narrow bars anterior to this; outer webs of primaries, plain dusky slate; the inner webs with wide transverse bars of white on the outer quill, on the others broken into a confused mottling. Rump and upper tail coverts, nearly uniform blackish; the outer feathers of the latter with their exterior webs partly white.

Total length about 12 inches; wing, 6.50; culmen, 1.10; tarsus, 1.90; middle toe, 1.00.

This "Tattler," or as it is more commonly called by sportsmen, "Upland or Field plover," is pretty plentifully distributed throughout the United States, also in South America. It breeds in the States along Lake Erie and north—said to be very common on the Saskatchewan plains. It breeds regularly along the north shore of Lake Erie, in probably all of the southern counties of Ontario. Although a wader it seldom wades, preferring dry pastures and ploughed fields near the water, living upon crickets, grasshoppers and other small insects, upon which it grows very fat.

It is then considered a great delicacy for the table. In Ontario it is generally found in small flocks of from six to eight. Unlike many others of the family it is very fond of alighting on the fence, but is mainly a terrestrial bird. The nest of this bird is always upon the ground, and usually contains four eggs. The Upland Plover generally reaches Ontario early in April, and leaves about the first of October.

NUMENIUS LONGIROSTRIS (WILSON).

THE LONG BILLED CURLEW.

Specific Character.—The largest American species of this genus. Bill very long, much curved, upper mandible longer than the under, somewhat knobbed at the tip ; wing, rather long ; legs, moderate ; toes united at the base. Entire upper parts pale rufous tinged with ashy, every feather with transverse and confluent bands of brownish black, most numerous and predominating on the back and scapulars ; secondary quills, under wing coverts and axillaries, bright rufous ; primaries with their outer webs, brownish black ; and their inner webs, rufous ; with transverse bands of black ; under parts, pale rufous ; with longitudinal lines of black on the neck and sides ; tail, rufous, tinged with ashy ; transversely barred with brownish black. Specimens vary to some extent in the shade of the rufous colour of the plumage, and very much in the length of the bill. The rufous colour is probably more distinct in the young.

Total length about 25.00 inches ; extent about 40.00 ; wing, 10.00 ; tail, 4.00 ; bill, 2.30 to 8.50 ; tarsus, 2.25. Bill, black ; becoming dull light lilac brown on basal half of mandible ; iris, brown ; legs and feet, gray.

Habitat.—Temperate North America, migrating south to Guatemala and the West Indies. Breeds in the south Atlantic States, and is probably generally distributed over North America, from the Gulf of Mexico to Canada on the north ; and we often, in the fall and spring, see large flocks of them in Ontario. We have no record of their breeding in Ontario. Prof. Macoun speaks of it as rare in the North-West. The Long-billed Curlew feeds upon crickets and other insects, and is considered a good table bird.

NUMENIUS HUDSONICUS (BAIRD).

THE HUDSONIAN CURLEW.

Specific Character.—Crown, dark sooty brown ; divided longitudinally by a mesial line of buff ; a narrow dusky stripe on side of head, from bill to anterior angle of eye, continued back beneath the eye and along upper edge of auriculars, separated from the dusky of the crown by a wide well defined superciliary stripe of light buff. Rest of head and neck and entire lower parts, light buff ; the chin, throat and abdomen, immaculate ; other portions, including cheeks, entire neck, jugulum, and breast, marked with linear streaks of dark brown ; axillars, pinkish buff or dilute cinnamon barred with dark brown. Upper parts spotted with dark sooty brown and light buff, the latter prevailing on the wing coverts, the former on the back ; rump and upper tail coverts similarly spotted ; primaries dusky, the inner quills spotted with buff ; iris brown.

Total length about 18.00 inches ; wing, 9.00 ; culmen, 3.00 ; tarsus, 2.25 ; middle toe, 1.35.

Habitat.—The whole of America including the West Indies ; breeds in the high north, and winters chiefly south of the United States.

The "Short-billed Curlew" as it is generally called by sportsmen, is pretty generally distributed throughout North America. It is common in Ontario during its migrations, reaching here early in June on its way north, in quite large flocks, alighting on the rocky points which jut out into the lakes. It is very wary and so shy that it is hard to get a shot at it. Flocks come regularly in June to Gull Island, off the mouth of the Grand River in Lake Erie, and staying for a few days pursue their journey north to their breeding grounds. It feeds upon small shellfish, worms, etc. Its flesh is white and delicious eating. It is said to lay four eggs as a set. It goes south early in October.



THE HUDSONIAN CURLEW (*Numenius Hudsonicus*).



THE ESKIMO CURLEW (*Numenius borealis*).

NUMENIUS BOREALIS (RIDGW).

THE ESKIMO CURLEW.

Specific Character—Crown, dusky; streaked with buff, but without distinct mesial stripe; a dusky stripe of aggregated streaks on side of head, from bill to and behind the eye; rest of head, neck, and entire lower parts, light buff; the cheeks, and neck streaked, the breast, sides, flanks and crissum with V shaped markings of dusky brown; axillars and lining of the wing, pale cinnamon; the former narrowly barred with dusky. Upper parts spotted dusky and buff; the wing coverts more grayish brown, with dusky shaft streaks; primaries, including their inner webs, plain brownish dusky. Rump and upper tail coverts spotted light buff and dusky. Tail, brownish gray, barred with dusky.

Total length about 13.50 inches; wing, 8.50; culmen, 2.25; tarsus, 170; middle toe, 1.00.

In plumage this little Curlew closely resembles *N. Hudsonicus*, but has the primaries finely and confusedly mottled, instead of being marked with very distinct and regular ochraceous spots; the breast with transverse V shaped markings, instead of linear longitudinal streaks; while there are other differences besides the important one of size, which readily distinguish them.

Habitat.—The whole of the eastern province of North America, but not recorded from western North America--breeding in the Arctic regions and migrating south to the extremity of South America, Patagonia, Falkland Islands, Chili, etc.

This Curlew, called in New England the "Doe bird," is very plentiful in the regions where it breeds, and in the course of its spring and fall migrations, the great highway of which is through those states which lie just east of the Rocky Mountains. It is said to be common in northern Illinois. It passes north over Ontario early in May, and returns early in October. The writer and a friend took two specimens in fine condition on October 10, 1884, on Lake Erie shore, near Port Maitland. They were in company of Golden Plover. However, this Curlew is not common in Ontario, and can only be of interest to the sportsman in the autumn migration. It feeds on crickets, grasshoppers and other insects, besides berries and seeds. The nest is made on the ground, and three eggs, sometimes four, constitute a set. The young are able to run as soon as hatched.

CHARADRIUS DOMINICUS (RIDGW).

THE AMERICAN GOLDEN PLOVER.

Specific Character.—Bill rather short, legs moderate, wings long, no hind toe, tarsus covered before and behind with small circular or hexagonal scales, upper parts brownish-black, with numerous small circular and irregular spots of golden-yellow, most numerous on the back and rump and on the upper tale coverts assuming the forms of transverse bands generally; also with some spots of ashy white. Entire under parts black with a brownish or bronzed lustre, under tail coverts mixed or barred with white. Forehead, border of the black of the neck, under tail coverts, and tibiae white; axillary feathers cinereous; quills dark brown; middle portion of the shafts white, frequently extending slightly to the webs and forming longitudinal stripes on the shorter quills; tail dark brown with numerous irregular bands of ashy white and frequently tinged with golden-yellow; bill black; legs dark bluish brown. The winter plumage of both young and adult is different. Under parts dull ashy, spotted with brownish on the neck and breast, frequently more or less mixed with black; many spots of the upper parts dull ashy white; other spots especially on the rump golden yellow.

Total length about 9.50 inches; wing, 7.50; tail, 2.50; culmen, .92; tarsus, 1.70; middle toe, .90.

Habitat.—America in general from the Arctic coast to Paraguay and Chili; breeding in the Arctic and sub-Arctic regions migrating in autumn to southern localities. The Golden Plover passes north through Ontario in April moving in large scattered flocks travelling principally by night at a great elevation, seldom alighting, hence their spring migration is not so often noticed, but during the autumn migration they pass leisurely southward, often staying weeks in a locality suited to their tastes as regards food, etc. They are very fond of high, dry, old commons or pastures or fall wheat fields, where they find their favourite food, crickets and grasshoppers, etc. They always at this season keep together in flocks and are very wary and hard to get near. Sportsmen usually hunt them in parties, stationed at different points about their haunts, they are caused to fly from one gunner to another who chooses his time to rake the flock, and often large numbers are taken in this way. This bird at this time is generally in such good condition as to split the whole length of the breast on falling to the ground. It is considered a good table bird, in the cities bringing almost as high prices as the Woodcock. Formerly Golden Plover were very plentiful, occurring in immense flocks, but of late years owing to their incessant slaughter, their numbers are sadly diminished. They reach Ontario early in September, and often stay until the first week in October. They breed in the far north, nest on the ground, eggs four in number.

FAMILY RALLIDÆ.—THE RAILS, GALLINULES AND COOTS.

Of this family the only one of much interest to sportsmen, is the Carolina Rail which is the most numerous of the Rail family and is the only one much hunted for its flesh. It is a small bird with the following history.

PORZANA CAROLINA (BAIRD).

THE CAROLINA RAIL: SORA RAIL.

Specific Character.—Above bright olive brown with longitudinal spots of black, some of the feathers edged with white; top of head with a broad longitudinal stripe of black; anterior portion of head, with chin and throat, black. Sides of head and neck, except as described, jugulum and breast, light plumbeous; abdomen white; anal region and crissum creamy white or pale buff; flanks sharply barred with white and slate colour.

Length 8-9 inches; wing, 4.00 inches; tail, 2.00 inches; bill, $\frac{2}{3}$ inch; tarsus, $1\frac{1}{4}$ inches.

Habitat.—The whole of temperate North America, but most common in the eastern provinces, south to New Grenada and Venezuela. Breeds chiefly in the northern part of its range. This the common Sora Rail is very abundantly distributed during its spring and fall migrations. It passes north during April and May and returns in September, and remains till October or until there is a sharp frost which usually makes it travel farther south. It frequents reedy or marshy flats where it can feed on the seeds of the reeds, etc., and can be hidden by the cover, for it is a shy little bird, mainly moving about by running, seldom flying unless forced to. When flushed by the gunner it affords an easy shot and often great numbers may be taken in a day. It can dive or swim with great rapidity. In Virginia they are hunted along the marshy banks of rivers at night, when lights are used, and the birds knocked down with the paddle as the boat is shoved through the reeds. Nests in fresh water marshes on a tussock of grass and usually lays from seven to twelve eggs.

RALLUS ELEGANS (AUDUBON).

THE KING RAIL.

Specific Character.—Above yellowish olive or ochraceous drab very conspicuously and sharply striped with black, crown dark brown; supra loral streak of brownish white, continued to the occiput in a broader stripe of brownish gray; lores and sub-orbital region brownish gray or dull brownish, chin and throat white, remainder of head and neck including jugulum and breast, light cinnamon; flanks and sides dark brownish or blackish dusky barred with white, the white bars averaging about 10-15 of an inch in width, the interspaces more than twice as wide; crissum mixed dusky and white; abdomen lighter than the breast; back generally umber brown with darker stripes down the middle of each feather; lower mandible and edges of upper brownish yellow, ridge of upper and tips of both deep brown; iris, bright red; feet yellowish brown tinged with olive, claws of the same colour. Total length 17 inches.

Habitat.—Fresh water marshes of the eastern States and southern Ontario.

This bird is considered by sportsmen generally as quite equal for the table to the Sora Rail, besides being much larger. It is not so plentiful, but has the same habits, living in thick marshes and rarely taking to wing. It feeds on insects, crayfish, tadpoles, seeds, etc.



THE KING RAIL (*Rallus Elegans*).

FAMILY, TETRAONIDÆ.—THE GROUSE.

The Tetraonidæ are characterised among gallinaceous birds by their densely feathered tarsi and by the feathers of the nasal groove which fill it and conceal the nostrils. The toes are usually naked (feathered to the claws in the Ptarmigans), and with pectinations of scales along the edges. The orbital region is generally bare with a naked stripe above the upper eyelid; some have an inflatable air sac on the side of the neck.

The species of Tetrao and Bonasa inhabit wooded regions; Lagopus belongs to the Arctic portions of the continent and generally become white in the winter. In Ontario we have the following members of this family.

- Richardson's Dusky Grouse.
 - Spruce Partridge, Canada Grouse.
 - Ruffed Grouse.
 - Sharp tailed Grouse.
 - Willow Ptarmigan.
 - Rock Ptarmigan.
-

CAANCE OBSCURUS, VAR. RICHARDONII (DOUGLAS).

RICHARDSON'S DUSKY GROUSE.

Specific Character.—Back and wings blackish brown crossed with wavy lines of slaty gray, mixed with yellowish brown on the scapulars. Long feathers of the sides tipped with white, under parts light slate mixed with white on lower parts. Cheeks black, chin and throat speckled with black and white feathers on sides of the neck slightly enlarged, covering a rudimentary air sac. Tail brownish black veined and marbled with grey and having a broad terminal band of the same colour. Female smaller, more varied and generally lighter in colour, but having the under parts and bar at the end of the tail slaty gray, as in the male. Length, 20 to 22 inches; wings, 9 to 10 inches; tail, 7 inches.

Habitat.—Rocky Mountains from central Montana northward into British America.

Eggs creamy buff spotted with chocolate brown. Mr. McIlwraith who gives the above description, quotes Mr. C. J. Bampton of Sault Ste. Marie as being the only observer who has recorded the occurrence of this bird in Ontario. He has often seen it brought into the market there.

CANACE CANADENSIS, VAR. CANADENSIS (LINN).

SPRUCE PARTRIDGE: CANADA GROUSE.

Specific Character.—Tail of sixteen feathers, prevailing colour in male black, feathers above banded with plumbeous, beneath uniform black with a pectoral band of white and white on the sides of the belly. Chin and throat above, black. Tail, with a broad brownish-orange terminal band. A coloured (red or yellow) comb of naked skin over the eye. Length, 16.20; wing, 6.70; tail, 5.44.

Female smaller but somewhat similar, the black bars above broader, the inner gray bars of each feather, including the tail, replaced by broader ones of brownish orange. The under parts have the feathers black barred with brownish orange, which, on the tips of the belly feathers, is pure white. The clear, continuous black of the head and breast is wanting. The scapulars, greater coverts and sides are streaked, as in the male.

Habitat.—Spruce forests and swamps of the northern United States and Canada, to the Arctic sea, west nearly to the Rocky Mountains.

Habits.—This very pretty grouse although formerly tolerably common over the greater part of Ontario, is now only found resident and breeding in the northern portions, seldom being seen further south than Muskoka. It is generally found in flocks of eight or ten, and when on the ground is said to resemble in its movements our common quail, rather than the Ruffed grouse. When disturbed they take to the trees, where they act so stupidly that it is said they may be taken by slipping a noose fastened to the end of a stick over the head, or knocked down one after another until all are killed.

Their breeding habits are much the same as those of other members of this family; when the love season arrives, the male is in his best plumage and puts on his best manners before his lady love, strutting about on the ground like a turkey cock, occasionally rising in a spiral manner above her in the air, then dropping on the ground again, beats his wings violently against his body, producing a sort of drumming sound much like that of a Ruffed grouse. The female constructs a nest on the ground generally under the low branches of some fir tree, the eggs are said to number from eight to eighteen and are described by Audubon as of a deep fawn colour, irregularly splashed with different tints of brown. They have only one brood in the season and the little ones are strong and active and follow the mother as soon as they leave the shell.

This grouse feeds in summer on berries of various kinds, as well as upon the buds and leaves of various plants, at this season their flesh is best for food. In the winter they feed upon the buds of spruce and firs, and then as a friend of mine once said, you might as well try to eat a piece of cooked pine board.

BONASA UMDELLUS, VAR. UMBELLUS (STEPHENS).

RUFFED GROUSE: PARTRIDGE: PHEASANT.

Specific Character.—Above, ochraceous brown, finely mottled with grayish; the scapulars and wing coverts with pale shaft streaks, the rump and under tail coverts with medial cordate spots of pale grayish. Tail, rufous, narrowly barred with black, crossed terminally with a narrow band of pale ash, then a broader one of black, this preceded by another ashy one. (In specimens from the Alleghany Mountains and New England States, the tail is usually more or less grayish to the base, sometimes entirely destitute of the rufous tinge). Lower parts white, yellowish beneath surface, with broad transverse bars of dilute brown, these mostly concealed on the abdomen. Throat and foreneck ochraceous. The feathers of the crown can be raised as a crest. Neck tufts, glossy black.

Length, 18.00 inches; wing, 7.20; tail, 7.00. Female smaller and with the neck tufts less developed, but the colours similar.

Habitat.—Eastern part of North America from Georgia to Nova Scotia and from the Atlantic to the Rocky Mountains. Richardson in his description of its habits says, that he met with it as far north as the 56th parallel of latitude. This well-known Grouse is still found over almost the whole of Ontario, but within the last few years its numbers are sadly diminished. This is the more to be regretted as it is without doubt the best game bird of the Province. This Grouse is a constant resident, and as a general rule is in no sense migratory, unless as the result of bush fires or a scarcity of food it may be induced thereby to shift its grounds a few miles. It is very fond of rough mountain and hill sides and the borders of rivers and small streams, in fact it is to be found wherever wooded country is to be met with. In Ontario we have both the rufous and grayish tailed birds if they may be called varieties; in other respects they seem alike and are found in the same covers. This bird when flushed, usually flies in a straight line but seldom for more than a few hundred yards at a time, when it alights, generally on the ground, and if followed will often be found to lie very close allowing the sportsman to pass within a few feet of it, when if it finds itself discovered it rises suddenly with a loud whirring noise, enough to disconcert the steadiest shot, who, if not on the alert, will be sure to find that his bird has almost instantly placed a bush or tree between them, and his chance of adding to his bag gone. When they light upon a tree they can be followed and more easily shot, and it is in this way that the pot-hunter makes such bags with his little dog trained to "tree partridge," that is, to follow them, chiefly by sight, and to bark at the foot of the tree till the hunter sneaks up and shoots the poor bird as it sits staring at the dog. On almost every other occasion it is a cunning, wary bird, strong on wing and hard to shoot, and if hunted in a sportsmanlike way, with a good setter or pointer, affords good sport.

The Grouse is more or less polygamous and the love season commences early in March, and is indicated by the drumming of the male birds. This sound is produced by the male bird only, who standing on a fallen log or on an elevated rock in a retired part of the woods, erects himself, expands his tail, and seems to inflate his whole body, then bringing his wings forward slowly at first, he beats the air with them in a rapid, vibratory motion, thus producing a sound which resembles the distant and closing reverberations caused by remote thunder, and seems to the listener much nearer than it really is. It has long been a disputed question as to how the bird produces the peculiar sounds, but on more than one occasion



THE RUFFED GROUSE, PARTRIDGE (*Bonasa Umbellus*).

reliable observers have cautiously approached the bird while thus trying to please its mate, and the result was as described above. A similar sound is produced by the vibratory motion of the wings of other birds, such as the snipe, night hawk, etc., while performing their gyrations in the air during the mating season. The Grouse has a habit also of strutting and manœuvering—much as a turkey-cock does—in a most pompous way. The female selects a retired part of the woods, and makes her nest on the ground beside some log, where she lays from eight to twelve eggs of a dark cream color, and when the young are hatched, as they are after an incubation of about four weeks, they are at once ready to follow the mother in search of ants' eggs, or small larva. The mother is very devoted to her charge, displaying the greatest courage in defending them, and while she is thus doing her best to beat off the enemy the little ones profit by the opportunity, and almost instantly not one of them is to be seen; the danger past, a few clucks from the mother brings them from their hiding places under chips, leaves, or whatever was at the time most available.

The food of the partridge consists of the buds of several kinds of trees especially the birches, which fact probably gives their flesh its peculiar and agreeable flavour. In severe seasons, however, it sometimes feeds on the buds of the Mountain Laurel, and then its flesh is poisonous. They also feed largely upon berries, as raspberries, blueberries, wild rose berries, thorn apples, winter-green berries, leaves, and some roots. Its flesh is esteemed a great delicacy, and on this account the pot hunter is not the least of its numerous enemies.

 PEDIOCÆTES PHASIANELLUS, VAR. PHASIANELLUS (ELLIOT).

SHARP-TAILED GROUSE.

Specific Character.—Prevailing colours, clear dusky black above and pure white beneath; no buff about the head, upper parts variegated with transverse rather zig-zag spots of yellowish brown; scapular with broad elliptical longitudinal medial spots of pure white; wing coverts with large rounded and outer webs of primaries with smaller and more quadrate spots of pure white. Breast thickly covered with broad V shaped, and the sides with less numerous sagittate marks of uniform clear slaty or dusky. Legs densely feathered, the long hair-like feathers reaching beyond the claws, and completely hiding the toes. Throat thickly spotted with dusky. No appreciable difference in plumage between the sexes.

Length, 18 to 20 inches; wing, 8 to 9; middle feathers of the tail, 4 to 6; outer feathers, $1\frac{1}{2}$.

Habitat.—British America from Hudson's Bay territory, south to the northern shore of Lake Superior, and west to Alaska and British Columbia.

Prof. Macoun says:—"This is the prairie chicken of our western plains, the true prairie chicken not being observed here." Dr. Coues, also says this is the prairie chicken of the whole North-West, usually occurring where the Pinnated Grouse does not, although the habitats of the two species overlap to some extent.

This bird is not reported in Ontario anywhere east of Sault Ste. Marie, where, as in the case of the Dusky Grouse, Mr. C. J. Bampton reports it as being occasionally seen on the market. It, however, becomes more abundant as you go west, for it is reported as being common near Winnipeg. Baird, Brewer, and Ridgeway, in their "North American Birds," say, "It is found in abundance on the outskirts of the Saskatchewan plains and throughout the wooded districts of the fur countries, frequenting the open glades or low thickets, on the borders of lakes, especially where the forests have been partially cleared, perching on trees in the winter but keeping to the ground in the summer, and at all seasons met with in flocks of from ten to sixteen. They are said, early in spring, to select some level place, where a covey meets every morning and runs round in a circle of about twenty feet in diameter, so that the grass is worn quite bare. If anyone approaches this circle the birds squat close to the ground, but if not alarmed by too near approach they soon stretch out their necks to survey the intruder, and resume their circular course, some running to the right and others to the left, meeting and crossing each other. These "partridge dances" are said to last a month or more, or until the female begins to incubate. The hen is said to lay about thirteen eggs early in June, the nest being on the ground, formed of grasses lined with feathers. The eggs are of a dark tawny colour, minutely dotted with darker spots of brown."

LAGOPUS ALBUS (AUD).

WILLOW GROUSE: WHITE PTARMIGAN.

Specific Character.—Bill very stout. Bill as high as the distance from the nasal groove to its tip. Tail always black, narrowly tipped with white; wing, except upper coverts, pure white.

Summer. Male.—Head, neck, and jugulum deep cinnamon rufous; whole upper parts except wings, paler, more fulvous brown, broadly and closely barred with black. Top of head spotted with black, and the jugulum and neck with scattered bars of the same

Female.—Entire plumage except wings, legs and tail, fulvous buff heavily barred and spotted above, and regularly barred beneath with black.

Winter.—Entire plumage, except the tail (which is black with a white tip), immaculate snowy-white; shafts of primaries black.

Length, 15 to 17 inches; wing about 8; tail $5\frac{1}{2}$.

Habitat.—Arctic America from Newfoundland to Sitka. Mr. C. J. Bampton, Registrar of Algoma, also reports this bird as a rare winter visitor about Sault Ste. Marie. Mr. Alexander H. Taylor of Ottawa, also reports that some winters it may frequently be seen on the market there, having been brought in by the hunters from the back country.

The peculiar change of plumage of these birds is a provision of nature shown in the covering of many of the birds and animals of the Arctic regions, as the Arctic fox, hares, leemings, owls, etc. It enables the defenceless ones to escape more readily the observation of their many enemies and the foxes, bears, owls, etc., the more readily to approach their prey.

This Grouse is said to be quite equal, as a game bird, to the Scotch Grouse, which it is not unlike. As an article of food they are considered equal to any other of the members of this family.

LAGOPUS MUTUS, VAR. RUPESTRIS (LEACH).

ROCK PTARMIGAN.

Specific Character.—Bill slender, distance from nasal groove to tip (.35) greater than height at base (.27). In summer the feathers of the back, black, banded distinctly with yellowish brown and tipped with white. In winter, white, the tail black; the male with black bar from bill through eye. Size considerably less than that of *L. albus*.

Length, about 14.50; wing, 7.50; tail, 4.50.

Female in summer.—Wings (except upper coverts) and legs, white; tail, (except intermediæ) black, narrowly tipped with white. Rest of plumage light ochraceous or buff, some feathers tipped with white, and all with broad transverse bands of black, this colour prevailing on the dorsal region. On the lower surface the buff bars exceed the black ones in width. Wing, 7.20; tarsus, 1.15; middle toe, .90; bill, .35 by .27.

Habitat.—Arctic America.

Mr. MacIlwraith quotes Mr. Bampton of Sault Ste. Marie for the appearance of this bird in that locality. It is also probable that these birds reach the vicinity of Ottawa and Montreal.

In its general habits it much resembles the *L. albus*. All these birds are feathered to the toe nails with long white hair like feathers and in summer change their plumage to correspond with the surroundings.



THE QUAIL, PARTRIDGE (*Ortyx Virginianus*,)

ORTYX VIRGINIANUS, VAR. VIRGINIANUS (BONAP).

QUAIL: PARTRIDGE: BOB-WHITE.

Specific Character.—Forehead, and line through the eye and along the side of the neck, with chin and throat white. A band of black across the vertex, and extending backwards on the sides, within the white, and another from the maxilla beneath the eye, and crossing on the lower part of the throat. The under parts are white tinged with brown anteriorly; each feather with several narrow, obtusely V shaped bands of black. The fore part of the back, the side of the breast, and in front, just below the black collar, of a dull pinkish red. The sides of the body and wing coverts, brownish red; the latter almost uniform without indication of mottling. Scapulars and upper tertials coarsely blotched with black and edged internally with brownish yellow. Top of head, reddish; the lower part of neck except anteriorly, streaked with white and black. Primary quills, unspotted brown. Tail, ash. Female with the white markings of the head replaced by brownish yellow; the black ones with brownish.

Length, 10.00; wing, 4.70; tail, 2.85.

Habitat.—Eastern United States and as far west as Dakota, Kansas, and eastern Texas; as far north as the southern portion of Ontario.

This gamy little bird is not a quail, properly speaking, although that is the common name in Ontario. It belongs to the family of *Pericidæ* or partridges and in the Southern States where it is very plentiful, it is known as the partridge. In the southern tier of counties in Ontario, west of Toronto, the quail is a permanent resident, being in no wise a migratory bird. Thirty or forty years ago, it was commonly found some distance north of Toronto, but it is doubtful if it is found at all there now. The severity of the winters, aided by its numerous enemies, has so depleted its ranks that its distribution is not so great as formerly. However it is astonishing how rapidly they multiply if one or two mild winters have been succeeded by dry spring weather during the breeding season. The nest is made about the last of April or the first of May, always on the ground, and as the bird likes to frequent low grounds, the nest is often after heavy rains covered with water and its contents consequently destroyed, in which case the hen, nothing daunted begins to lay again a lot of eggs, usually from twelve to twenty, although records have been made of as many as thirty eggs in one nest. It is probable however that more than one hen has contributed in such a case. It is almost incredible that the little mother could cover and keep warm, during incubation, such a large number, and yet it is rare to find in a nest any addled eggs. The little ones are able to run and follow their mother as soon as hatched. If she raises a second brood, which is generally the case, it usually unites with the first in the autumn, and if undisturbed they keep together till the next spring when they separate in pairs to take up housekeeping. The male is generally faithful to his mate, although occasionally he will associate with more than one female, when it is said that the little hens all contribute eggs to one nest.

Their habits are such that they are very liable to be destroyed. They roost upon the ground, generally in the weedy edge of some swale, sitting in a circle, heads out, and tails to the centre; in this way a watch is kept on all quarters for enemies, and it also serves in the winter to keep them warm, but if during the night they are covered by a large fall of drifting snow, followed by a partial thaw, and a crust forms, the birds are imprisoned and perish of hunger, and in the spring when the snow melts it is a very common thing to find a whole bevy

huddled together and dead from this cause. Cats, owls and vermin, too, take advantage of this way of roosting. In fact the quail is a bird which lives almost entirely upon the ground, and only occasionally, as when the snow is deep and loose, are they known to take to the trees when flushed.

The quail is a most useful friend to the farmer, and if his worth were well understood by those patrons of industry, and its gentle harmless ways appreciated, it is doubtful if the sportsman would get permission so often to trespass with his dog among the golden rod about the buckwheat fields, where this handsome little game bird is so generally found.

The food of the quail is seeds of various plants and berries. They feed largely also upon grasshoppers, cutworms and other insects and grubs, and get fat upon them. They are also very fond of buckwheat, corn and other kinds of grain. Their flesh is delicious, being far finer and more delicate than that of the grouse. During the breeding season the male bird, while its mate is setting, frequently mounts a stump or fence and whistles a note which sounds like the words "bob-white," hence the name.

MELEAGRIS GALLOPAVO, VAR. GALLOPAVO (LINN).

WILD TURKEY.

Specific Character.—The naked skin of the head and neck is blue; the excrescences purple red. The legs are red. the feathers of the neck and body generally are very broad, abruptly truncate and each one well defined and scale like; the exposed portion coppery bronze with a bright coppery reflection in some lights, in the specimens before us chiefly on the under parts. Each feather is abruptly margined with velvet black, the bronze assuming a greenish or purplish shade near the line of junction, and the bronze itself sometimes with a greenish reflection in some lights. The black is opaque, except along the extreme tip, where there is a metallic gloss. The feathers of the lower back and rump are black with little or no copper gloss.

The feathers of the sides behind, and the coverts, upper and under, are of a very dark purplish chestnut, with purplish metallic reflections near the end and a subterminal bar of black; the tips are of the opaque purplish chestnut referred to. The concealed portion of the coverts is dark chestnut barred rather finely with black, the black wider than the interspaces. The tail feathers are dark brownish chestnut, with numerous transverse bars of black, which when most distinct, are about a quarter of an inch wide and about double their interspaces; their extreme tip for about half an inch is plain chestnut, lighter than the ground colour, and there is a broad subterminal bar of black about two inches wide on the outer feathers and narrowing to about three-quarters of an inch to the central ones. The innermost pair scarcely show this band and the others are all much broken and confused. In addition to the black bars on each feather the chestnut interspaces are sprinkled with black. The black bands are all most distinct on the inner webs; the interspaces are all considerably lighter below than above.

There are no whitish tips whatever to the tail or its coverts. The feathers on the middle of the belly are downy, opaque and tipped obscurely with rusty whitish.

The wing coverts are like the back; the quills, however, are blackish brown, with numerous transverse bars of white, half the width of the interspaces. The exposed surfaces of the wing, however, and most of the inner secondaries are tinged with brownish rusty, the uppermost ones with a dull copper or greenish gloss.

The female differs in smaller size, less brilliant colours, absence generally of bristles on the breast and of spur, and a much smaller fleshy process above the base of the bill.

Male: Length 48.00 to 50.00 inches; extent 60.00 inches; wing 21.00 inches; tail 18.50 inches. Weight 16 to 35 lb. Female. Weight about 12 lb.; measurements smaller in proportion.

Habitat.—Eastern province of the United States and Canada. West along the timbered river valleys towards the Rocky Mountains; south to the gulf coast.

In North America there are two varieties of wild turkey, the Mexican, which has the feathers of the rump, the tail coverts and tail feathers tipped with whitish instead of dark rusty as in the other variety, the common wild turkey of eastern and southern United States and Canada. It is generally conceded now that it is to the Mexican variety we owe the origin of the domestic bird, some well-bred ones of which have been known to attain the weight of 45 lb.

Though once very plentiful in the southern and western counties of Ontario, even up to within a few years ago, it is now becoming very rare and is found probably only in the counties of Essex and Kent and even there it is only a matter of a short time when it must become extinct.

The habits of this bird are so well known in the domestic fowl, whose habits are similar, that it is unnecessary to describe their love-making which usually begins early in February, but the hen does not begin to lay for perhaps a month later, when she makes her nest on the ground beside a log or in some thicket, and deposits usually from ten to fifteen eggs almost exactly like those of the tame bird.

The food of the turkey is corn and other grain, grass and other plants, seeds, fruits, beetles, small lizards, tadpoles, etc. In the south it prefers to all other food pecan nuts and wild grapes, upon which it becomes exceedingly fat.

It is a very difficult bird to hunt, being wary, running at great speed, and if come upon suddenly flushing as readily as the grouse or quail and alighting in the highest trees after a long flight. They are generally taken by stratagem. One of the most common methods of trapping wild turkeys is by means of a trap made by laying up a square pen of poles or rails gradually narrowing at the top; under one side of it a trench is dug large enough to admit one turkey, then corn is spread about the woods at some distance and leading up to the pen where a train of grain is laid into it through the opening. The bird readily enters this and once within is so stupid that it constantly flies towards the top or sides in its efforts to get out, and in fact anywhere except through the opening by which it entered. In this way sometimes a whole flock may be entrapped.

Below is given the opinion of the late Professor Baird, of the Smithsonian Institute, America's best ornithological authority, as to the origin of the domestic turkey.

"As with nearly all the animals which have been brought under domestication by man, the true origin of the common barnyard turkey was for a long time a matter of uncertainty. As a well known writer (Martin) observes: "So involved in obscurity is the early history of the turkey, and so ignorant do the writers of the sixteenth and seventeenth centuries appear to have been about it that they have regarded it as a bird known to the ancients by the name of Meleagris (really the guinea-fowl or pintado) a mistake which was not cleared up till the middle of the eighteenth century. The appellation of "Turkey," which this bird bears in England, arose from the supposition that it came originally from the country of that name, an idea entirely erroneous, as it owes its origin to the New World. Mexico was first discovered by Grigalva in 1518. Oviedo speaks of the turkey as a kind of peacock abounding in New Spain, which had already, in 1526, been transported in a domestic state to the West India Islands and the Spanish Main, where it was kept by the Christian colonists.

It is reported to have been introduced into England in 1541. In 1573 it had become the Christmas fare of the farmer.

Among the luxuries belonging to the high condition of civilization exhibited by the Mexican nation at the time of the Spanish conquest, was the possession by Montezuma of one of the most extensive zoological gardens on record, numbering nearly all the animals of that country with others brought at much expense from great distances, and it is stated that turkeys were supplied as food in large numbers daily to the beasts of prey in the menagerie of the Mexican emperor. No idea can be formed at the present day of the date when this bird was first reclaimed in Mexico from its wild condition, although probably it had been known in a domestic state for many centuries. There can, however, be no question of

the fact that it was habitually reared by the Mexicans at the time of the conquest, and introduced from Mexico or New Spain into Europe early in the sixteenth century, either directly or from the West India islands into which it had been previously carried.

It has, however, always been a matter of surprise that the wild turkey of eastern North America did not assimilate more closely to the domestic bird in colour, habits and by interbreeding, although until recently no suspicion was entertained that they might belong to different species. Such, however, now appears to be the fact as I will endeavour to show.

The proposition I present is that there are two species, or at least races, of wild turkey in North America, one confined to the more eastern and southern United States, the other to the southern Rocky Mountains and adjacent part of Texas, New Mexico, Colorado and Arizona; that the latter extends along eastern Mexico as far south at least as Orizaba, and that it is from this Mexican species, and not from that of eastern North America, that this domestic turkey is derived.

In the proceedings of the zoological society of London for 1856 (page 61) Mr. Gould characterises as new a wild turkey from the mines of Real del Norte in Mexico, under the name of *Meleagris Mexicana*, and is the first to suggest that it is derived from the domesticated bird and not from the common wild turkey of eastern North America, on which he retains the name of *Meleagris gallopavo*, of Linnæus. He stated that the peculiarities of the new species consist chiefly in the creamy-white tips of the tail feathers and of the upper tail coverts, with some other points of minor importance. I suggest that the wild turkey of New Mexico as referred to by various writers, belongs to this new species and not to the *M. gallopavo*.

In 1858 in the report of the birds collected by the Pacific Railroad expedition (vol. ix., p. 618, of the series of Pacific Railroad Reports), I referred to this subject and established the existence in North America of two species of wild turkey, one belonging to eastern, the other to middle North America. Much additional material has since corroborated this view, and while the *M. gallopavo* is found along the Missouri River and eastward and extends into eastern Texas, the other is now known to belong to the Llano Estacado and other parts of western Texas to New Mexico and to Arizona.

The recent acquisition of a fine male turkey by the Smithsonian Institute, from the vicinity of Mount Orizaba, in Mexico, and its comparison with a skin from Santa Fe, enables me to assert the positive identity of our western and the Mexican species, and one readily separable from the better known wild bird of the eastern United States. There is now little reason to doubt that the true origin of the barnyard turkey is to be sought for in the Mexican species, and not in the North American, an hypothesis which explains the fact of the difficulty of establishing a cross between our wild and tame birds.

The presumed difference between the two species may be briefly indicated as consisting principally in the creamy or fulvous white of the tips of the tail feathers and of the feathers overlying the base of the tail and of the hinder part of the back of the Mexican and typical barnyard birds, as compared with the decided chestnut brown of the same parts in the eastern wild turkey. There are other differences but they are less evident, and those indicated will readily serve to distinguish the two species.

The true wild bird of eastern North America always has the tips of the tail feathers and upper tail covert of a chestnut brown colour; the Mexican species and its descendant of the barnyard never exhibit this feature.

Sometimes this domesticated bird is exactly like its wild original, differing only in rather greater development of the fatty lobes of the head and neck, and of this an example may be seen in the museum of the Smithsonian Institution.

There is a variety of the domestic bird which is entirely black, sometimes even including the larger quills, which in both species are naturally banded with white, and in this there may be little or no trace of any bands at the end of the tail and of its upper coverts; but whatever may be the asseverations of the sportsman, the poultry dealer or the farmer as to the wildness of any particular bird, or what the circumstances attendant upon its capture or death by trapping, shooting or otherwise, implicit confidence may be placed in the test above indicated, namely: if the tips of the tail coverts and tail are chestnut brown, the specimen belongs to the *M. gallopavo* or "Wild turkey," if the same part is either entirely black or any shade of whitish or light fulvous, then it is a "barnyard" fowl.

GLOSSARY OF TECHNICAL TERMS

USED IN DESCRIBING THE BIRDS.

- Alula.—Little wing, the bastard wing composed of the feathers, that are set on the so-called thumb.
- Auriculars.—The straight hair like feathers overlying the ears.
- Axillars.—Feathers growing from the armpit.
- Coverts.—The small feathers under or over the tail or wings.
- Crissum.—The under tail coverts taken together.
- Cinereous.—Of an ashy colour.
- Corrugated.—Wrinkled.
- Cordate.—Heart shaped.
- Crescentic.—Moon shaped.
- Commissure.—The line of junction of the mandibles when closed.
- Culmen.—The highest arch of the upper mandible.
- Dorsal.—Belonging to the back.
- Fulvous.—Of a brownish yellow colour.
- Fuliginous.—Dark brown.
- Falcate.—Sickle shaped.
- Glaucous.—A dull green passing into blue sea green.
- Gallinaceous.—Having the nature of a domestic fowl.
- Intertomial.—Between the cutting edges of the bill.
- Interscapulars.—The feathers between the shoulders.
- Iris.—The circular muscular curtain hanging perpendicularly in the eye between the aqueous and vitreous humors and having in it a circular opening the pupil.
- Jugulum.—The throat.
- Lores.—Space between the eye and the bill.
- Loral.—Belonging to the lores.
- Lanceolate.—Lance shaped.
- Mandible.—The jaw.
- Nuchal.—Belonging to the neck or nape.
- Nape.—Back of the neck.
- Nasal.—Belonging to the nose.
- Ochraceous.—Colour of yellow ochre.
- Orbital.—Pertaining to the eye socket.
- Occiput.—Back of the head.
- Primaries.—The nine or ten stiff feathers which form the tip of the wing.
- Pileum.—The cap or top of the head.
- Plumbeous.—Lead colour.
- Pectinations.—Comb-like tothing.
- Pectoral.—Belonging to the breast.

Rictus.—Gape of the mouth.

Remiges.—Quills of the wing.

Rectrices.—Quills of the tail.

Rufous.—Reddish rusty.

Secondaries.—Quills belonging on the fore-arm.

Scapulars.—Feathers growing from the shoulder blade.

Sagittate.—Arrow shaped.

Speculum.—Bright coloured area on the secondaries of the ducks chiefly.

Superciliary.—Over the eye, the eyebrow.

Tertials.—The large inner quills of wing growing from the elbow.

Tibia.—The shin bone, the bone of the leg between the knee and the heel.

Tarsus.—The ankle bones taken together,

Truncate.—Cut squarely off.

Unguis.—Nail or claw.

Undulate.—Waved, made rolling.

Violaceous.—Violet coloured.

Vinaceous.—Wine coloured.

Vermiculated.—Marked with fine cross markings.

PRELIMINARY REPORT

ON THE

FISH AND FISHERIES OF ONTARIO.

BY

PROF. RAMSAY WRIGHT,

UNIVERSITY OF TORONTO.

TORONTO, January, 1891.

Dr. G. A. MACCALLUM,

Chairman of the Ontario Fish and Game Commission.

SIR,—I have the honour to transmit herewith a Preliminary Report on the Fish and Fisheries of Ontario.

Your Commission had originally intended to collate the information received in answer to a series of questions distributed to persons interested in the subject throughout the Province. The answers, however, appeared to indicate that a Preliminary Report containing a synopsis of what has already been published in regard to it, with descriptions and figures of the species of fish occurring in Ontario, would tend not only to render more precise the replies to future investigations of your Commission, but also to awaken a widespread interest in the whole matter. In preparing this synopsis I have been chiefly indebted to the publications of the U. S. Fish Commission, which has with great liberality furnished the illustrative plates, but I have consulted, where necessary, the Dominion Fishery Reports and the Reports of the Ontario Crown Lands Department, as well as other available sources of information.

The first section of the Report deals with geographical considerations likely to affect the distribution of the various species of fish occurring within the waters of the Province, the heights above sea-level, depths and temperatures being indicated where possible.

This is followed by a short account of the natural history of fish sufficient to explain the technical terms used by Ichthyologists in distinguishing the various species. Attention is called to the desirability of the extension of our knowledge as to the conditions of life of our food-fishes.

The third section furnishes a detailed account of the natural history of the species of fish reported from the Province, special attention being given to those of economic importance.

Thereafter the statistics contained in Dominion Reports and the legislative enactments of the Dominion Government as far as these affect Ontario are summarized, and the adequacy of the close seasons fixed considered.

A short account of the apparatus employed in catching fish and the methods of preparing them for the market follows, succeeded by a discussion of the causes of and remedies for reported decreases in the catch of fish.

Finally the problems are indicated which would occupy the attention of a Permanent Fish Commission for the Province of Ontario.

I have the honour to be, Sir,

Yours respectfully,

R. RAMSAY WRIGHT.

GEOGRAPHICAL CONSIDERATIONS.

The Province of Ontario, it is said, owes its poetic Indian name to its "beautiful prospect of hills and waters." It is with the inhabitants of the latter that the present section of this Report deals, and it appears therefore to be an indispensable preliminary that some general account of the geographical disposition of the numerous lakes and rivers of the Province should be given.

The most important of these furnish the boundaries which separate Ontario from the United States on the south and from the neighbouring parts of the Dominion of Canada on the east and north-west.

Thus the international boundary line between the Province and the States of New York, Pennsylvania, Ohio, Michigan, Wisconsin and Minnesota passes through the River St. Lawrence and the chain of the Great Lakes, then by Pigeon River and the head-waters of Rainy Lake and River to the Lake of the Woods, a distance of some 1,600 miles, while the north-west boundary line, which separates it from Manitoba and Keewatin, stretches for some 800 miles through English River, Lac Seul, Lake Joseph and the Albany River to the mouth of the latter in Hudson's Bay. From this point, the northern boundary—the Ontario sea-coast—extends for 250 miles along James' Bay to a point midway between Hannah Bay House and the mouth of the Nottawa River and due north of the head of Lake Temiscaming. The meridian which joins this point and the head of the lake forms an artificial boundary line of 275 miles in length between this part of Ontario and the North-Eastern Territory on the east, which is completed further south and east through a stretch of another 500 miles by the natural boundary, separating it from the Province of Quebec, formed by the lake above named and the magnificent Ottawa River which issues from it.

The territory so bounded contains upward of 200,000 square miles, and its most distant points from east to west and from north to south are respectively upwards of 1,000 and 700 miles apart. All the waters named, and others included within the area of the Province belong to two great water-systems, the Hudson's Bay system in the north, and the St. Lawrence system in the south. The watershed separating these—the so-called "Height of Land"—extends, so far as it lies within the Province, south and west from Lake Abittibe to within 100 miles of the north channel of Lake Huron, and then runs parallel therewith, and with the coast line of Lake Superior, occasionally approaching within 50 miles of the coast or receding, as, for example, round Lake Neepigon, to a distance of 150 miles. West of Lake Neepigon, the height of land approaches Thunder Bay between Dog Lake and Lake Shebandowan which belong to the St. Lawrence system on the one hand, and Lac des Milles Lacs, which is tributary to the Hudson's Bay system on the other. It then crosses the international boundary at a point immediately west of Arrow Lake.

At no point does the height of land attain any great elevation above the sea; the highest levels in fact are reached comparatively abruptly from the shores of the Great Lakes, and the height of land is therefore constituted by the most elevated tracts of a great plateau extending between the Great Lakes and James' Bay.

The geological character of this plateau, which forms by far the greater part of the Province of Ontario, affords so complete an explanation of the very characteristic inland waters of the Province, that some reference thereto will assist the reader in forming a conception of their arrangement.

A line drawn from the outlet of Lake Ontario, (near Kingston) to Matchedash Bay in the Georgian Bay, (near Midland in the accompanying map), divides Ontario into two very unequal parts. The northern part is almost entirely formed of rocks of the Laurentian and Huronian series, consisting largely of gneiss and crystalline limestones, which, although apparently altered in their structure, present evidence of being the most ancient sedimentary rocks, and have on this account been termed Archæan. They offer, however, a very different degree of resistance to the eroding and transporting powers of water than do the more recent sedimentary rocks which have not undergone metamorphosis, and thus, instead of continuous river channels, we have series of irregular depressions and clefts converted into lakes by the accumulation of rain and melted snow, and connected with each other by short rapid rivers and falls. This country is generally densely wooded, and in many places, owing to the protrusion of the crystalline rocks through the surface clays, unfitted for agriculture, but nevertheless there are large areas, especially north of the height of land, where the rocks are not exposed and which consequently furnish large tracts of arable land. Only two regions north of the line referred to are underlaid by rocks of more recent origin than the Huronian and Laurentian series. These are firstly, the triangular tongue between the Ottawa and St. Lawrence Rivers as far west as a line drawn from Brockville to Arnprior, which is underlaid by Cambrian and Lower Silurian strata; and secondly, the northern Palæozoic area of James' Bay, a low, level and swampy region, free from rocks and lakes, extending from the south-west shore of the bay towards the height of land, and involving a considerable part of the area traversed by the Albany and Moose Rivers. This region, whose steadily flowing rivers, uninterrupted by lakes, present a difference between high and low water mark of about ten feet, necessarily offers somewhat different conditions of life to the finny tribe than the Laurentian region. It is surrounded by a curved rim of Archæan rocks, the unyielding nature of which brings it about that the rivers flowing towards James' Bay meet with a great and rapid descent at the point where they pour over it. The Long Portage of the Abittibi River, marked in the accompanying map, indicates the position of this rim at the point in question. It is similarly situated in the Moose and Albany Rivers, but the sides of the rim converge northward to the shores of James' Bay.

The second and very much smaller part of Ontario is that south of the line described above. It is underlaid by Silurian and Devonian strata in ascending geological order from north to south and west, and is crossed by the great Niagara escarpment, an abrupt rise which extends from the Niagara River by Hamilton, Georgetown, etc., to Cabot's Head in the Georgian Bay. Both east and west of this rise, the country, which forms a continuous tract of fertile farming land, presents a very different aspect from the rugged landscape of the northern Archæan region. On the east the surface is more undulating, the ground gradually rising from Lake Ontario in a series of ridges composed of drift materials to a height of some 700 feet. Some lakes, like Rice Lake and Lake Scugog, are situated in the midst of these drift ridges, others are situated along the line of junction with the Archæan region to the north. To the west of the escarpment on the other hand, the land slopes away gently towards Lake Huron and Lake Erie, and although, as we shall see, important rivers find their way into both these lakes, yet it differs from the country to the east in the absence of small inland lakes.

After this short preliminary sketch of the geography of the Province, some further details are necessary as to the waters bounding and inclosed by the subdivisions described. Most important, of course, are the Great Lakes, indeed, it is they alone which are at present important from an economic standpoint, but it is desirable from a scientific point of view that both of the great water-systems should be considered with the view of eliciting information as to the differences in the fish-fauna of each.

THE GREAT LAKES.

These magnificent expanses of fresh water form part of a semicircle of lakes stretching from the Pacific ocean to the Atlantic concentrically with Hudson's Bay, viz.—Great Bear Lake, Slave Lake, Athabasca, Wollaston, Deer Lake, Lake Winnipeg, Lake Manitoba, Lake of the Woods, Superior, Huron, Erie, Ontario and the St. Lawrence. They are considered to represent the ancient shore of the ocean retiring before a rising continent. Many curious facts as to the inhabitants of these lakes are intelligible if we bear in mind the physical changes which geologists tell us they have undergone in the past.

Lake Superior, the largest expanse of fresh water on the globe, forms an inexhaustible reservoir for the St. Lawrence system, containing, as it has been estimated to do, some 4,000 cubic miles of water. Its north shore is bold and picturesque, varying in height from 300 to 1,360 feet, and deeply indented in some parts, where innumerable harbours facilitating commerce and fisheries are formed.

Its greatest length is some 420 miles, measured on a curve from east to west; its greatest breadth is 160, while its area has been calculated at 32,000 square miles. Taking into consideration its great depth (in some places it reaches 1,200 feet), it is not wonderful that such a large body of water should materially influence the temperature of its shores, and should not be easily affected by seasonal alterations. The temperature of its surface waters in July has been observed to be 39°F (= 4° C), that of the atmosphere being 51° (10.5° C), while the thermometer at some distance in the interior registered 70° and 80° (= 25° and 26° C).

The waters of the lake are derived from a basin drained by more than two hundred streams; several of these are of considerable size, but almost all are impetuous torrents, descending from the height of land for 50 to 150 miles. Proceeding from the head of the lake eastwards, the most considerable are the Kaministiquia, the Neepigon, the Pic on the north, the Michipicoten, the Agawa, the Montreal, the Batchawaung and the Goulais on the east side. Of these, the Kaministiquia is the only one navigable for large vessels for any distance from its mouth; it flows into Thunder Bay at Fort William. The Kakabeka Falls, situated near the fork of the branches draining Lake Shebandowan and Dog Lake, are said to be scarcely inferior in grandeur to the Falls of Niagara.

The Neepigon River, the largest on the north shore, takes its origin in Lake Neepigon, an oval sheet of water 30 miles north-west of Lake Superior, and 313 feet higher than that lake; it discharges itself through several small lakes and a wide deep channel into Neepigon Bay. The water of this river and lake, so celebrated for the large speckled trout with which they swarm, has earned for the lake its Indian name, which signifies "Deep Clearwater Lake." The lake,

which measures 120 miles in length by 60 in breadth, is deepest in the southern and eastern parts, where a depth of 540 feet has been ascertained, and in consideration of the area drained by the streams which it receives and the volume of water discharged through its outlet, may be regarded as one of the most important head-waters of the St. Lawrence. Its largest affluents are the Kayosk or Gull River on the west and the Sturgeon River on the east.

The second river in point of size on the north shore is the Michipicoten, a large clear rapid river which has long served as an important canoe-route to Hudson's Bay. The other rivers on the east shore are of the same character, receiving tributary streams which pour their water through rapids and falls, often of considerable height, into the main current.

Lake Superior discharges its water into Lake Huron through the St. Mary River, a stretch of 25 miles, part of which, descending 22 feet in three-quarters of a mile, is very rapid, forming the Sault Ste. Marie. The strait so formed where it widens into Lake Huron is interrupted by a series of islands which run parallel to the north shore and which may be regarded as a continuation of the promontory into which the Niagara escarpment is continued. These islands, of which the chief is Manitoulin Island, together with the promontory referred to, separate the so-called North Channel and the Georgian Bay from the main body of the Lake lying to the south. The latter has a surface of 14,000 square miles, while the Georgian Bay, from Nottawasaga Bay to Shebanahning (Killarney) and the eastern extremity of Grand Manitoulin Island, has been estimated to have an area of 6,000 square miles. The North Channel on the other hand, exclusive of its islands, has been reckoned to contain 1,700 square miles. As before observed, Lake Huron is 22 feet lower than Lake Superior, and therefore 578 feet above sea level. Its average depth is as great as that of Lake Superior, but even greater depths have been ascertained in places—over 1,800 feet having been found off Saginaw Bay on the American side. The greatest length of the Lake is 280 miles; its average breadth, 70. Like Lake Superior, it is distinguished, especially in the north-western parts, for the peculiar transparency of its waters.

Emptying themselves into the North Channel and the Georgian Bay are the following large rivers:—The Mississaga, the Serpent, the Spanish, the Wahnapitae, French River, the Maganetawan, and the Severn. The last mentioned serves as the outlet of Lake Simcoe, but all of them drain a country studded with innumerable lakes and lakelets. The French River has a special importance as forming an almost direct line of communication through Lake Nipissing between the Upper Lakes and the Ottawa. Its navigation is much obstructed by falls and rapids, for in its 40 miles from Lake Nipissing it falls through 87 feet. The watershed between Lake Nipissing, the height of which is 665 feet, and Upper Trout Lake—the source of the Mattawan, (a branch of the Ottawa)—is 714 feet high. Lake Nipissing itself is one of the larger inland lakes, measuring 40 miles from east to west, and with a maximum breadth of 20 miles from north to south. Its area is estimated at 300 square miles. The northern shores of the lake are low, generally of flat rock and sand, and the water shallow with a sandy bottom. Its principal affluent is the Sturgeon River, a stream of considerable size flowing from the north, which forms one of the outlets of Lake Tamagaming, a fine sheet of water, 800 feet above sea-level, with an area of 330 square miles, which has a second outlet towards the Ottawa system through the Montreal River. Of the streams flowing from the Province into the main body of Lake Huron the most important are the Maitland and the Saugeen.

At its extreme southern extremity Lake Huron contracts itself into the St. Clair River, a stream which flows due south for 44 miles between moderately high banks before expanding into the small lake of the same name. Lake St. Clair is 30 miles long by 24 wide, with an area of 360 square miles, and a depth of 12 to 22 feet. It, again, communicates with Lake Erie by the Detroit River, which varies considerably in width, and is studded with numerous islands.

Lake Erie differs considerably from the other lakes, and especially from the Upper Lakes in its depth; its average depth is only 80 feet; the west end is shallow, the deepest points, which do not exceed 220 feet, occurring off Long Point on the north shore. It is 240 miles long, 57 broad at its broadest point, and has an area of 9,000 square miles. The fall from Lake Huron through the St. Clair and Detroit rivers is very gentle, so that Lake Erie exhibits a difference of level of 13 feet from Lake Huron; it is in the Niagara River, which forms the outlet of the Lake at the eastern extremity, that the great fall occurs over the Niagara escarpment, so that in its stretch of 36 miles from Lake Erie to Lake Ontario a difference of levels of 230 feet is achieved, two-thirds of which is accomplished at the Falls. Lake Ontario is 185 miles wide, 40 broad, and has a maximum depth of 600-700 feet. Few rivers of importance fall in on the North Shore; of these the Trent, which, with the aid of its tributary, the Otonabee River, drains several small lakes before falling into the Bay of Quinte, may be mentioned.

At its eastern end the outlet of the lake into the St. Lawrence River, which here first attains its name, is studded with the "Thousand Islands," and before the river is augmented by the Ottawa at Vaudreuil it expands into several quiet lake-like reaches and plunges down in long and picturesque intervening rapids.

To complete the account of the St. Lawrence system, a short reference to the affluents of the Ottawa River, situated within the Province of Ontario is necessary. Lake Temiscaming, the largest and deepest expansion of the Ottawa, receives the most northerly of these; it is a magnificent stretch of navigable water, 67 miles in length, and varying in breadth from 6 to 8 miles. The ascertained height is 612 feet. The River Blanche, which drains a clayey region of the Height of Land, and the Montreal River which comes from the north-west, and in its course receives one of the outlets of Lake Temagaming, are the chief tributaries. Immediately to the east of Lake Nipissing is the watershed between the Georgian Bay and an important affluent of the Ottawa, the river Matawan. Between the mouth of this river and the City of Ottawa, several important streams, which drain the lakes of the south-eastern tract of the Archæan region, fall into the Ottawa on its right bank, viz., the Petewawa, 140 miles long, with a drainage area of 2,200 square miles, Black River, 120 miles long, with an area of 1,120 square miles, and the Madawaska, 240 miles long, and an area of 4,100 square miles.

Geologists, it is indicated above, have found evidence of many changes in the outlines of the St. Lawrence Basin. At one time the Great Lakes must have been salt water, their northern shores forming the coast line of the high Archæan land to the north. Maritime plants on the north shore of Lake Superior, and marine shrimps in its depths which were able to accommodate themselves gradually to the change in salinity of the water as the land rose, are still found as evidence of this. But, even since their conversion into inland seas, the outlines of the modern lakes by no means agree with what they must have been in the past. Lake Erie, for example, is a comparatively modern way for the waters of the Upper Lakes to escape to the sea, and it is probable that Lake Nipissing

and the Ottawa valley formed at one time the chief outlet, although Lake Simcoe and the chain of lakes connecting with the Trent Valley may also have formed a similar outlet. It is probable that further research may prove the different character of the fauna of this lake to be due to its geological history.

THE HUDSON'S BAY SYSTEM.

With the exception of the great rivers flowing from the Height of Land to James' Bay, their immediate neighbourhood and the larger lakes in their course, comparatively little is known of the part of Ontario belonging to this system. A rapid survey of these with reference to the map will therefore suffice.

Lake Abittibi is situated seventy miles north of Lake Temiscaming, and just on the other side of the watershed from the head waters of the River Blanche. It is situated in a northward continuation of the clay plain in which that river arises, and is 245 feet higher than Lake Temiscaming, being only 60 feet lower than the Height of Land portage. The other branches of the Moose River similarly originate in lakes, often of considerable size, near the Height of Land, and the same is true of the Kenogami and other rivers flowing northward into the Albany. The latter river, from its origin in Lake St. Joseph, flows east and north through upwards of 500 miles on its way to the sea. Between Lake Joseph and Lac Seul is the height of land which separates the tributaries of the Nelson River from those of the Albany. The area of Ontario, bounded on the east by this watershed, and that between Lake Superior and the tributaries of Rainy River, is of very considerable size, and everywhere studded by lakes great and small; over 2,500 square miles of water are included in this tract of the Province. Lac des Milles Lacs is one of the largest of these lakes; it discharges into Rainy Lake through the Seine River, but the Lake of the Woods and Lac Seul are the chief reservoirs of the Nelson River system within Ontario. These discharge themselves into Lake Winnipeg by the Winnipeg River in the one case, and its tributary, the English River in the other. The Lake of the Woods is seventy miles in length and has an area of over 1,000 square miles, the greater part of which, 627 square miles, lies within the limits of the Province. It is 1,062 feet above sea-level, but 350 feet higher than Lake Winnipeg and consequently the River Winnipeg offers a series of magnificent falls and rapids in its course. The Lake of the Woods is very irregular in its contour, a peninsula jutting in from the east, separates the southern shallower part—"Lake of the Sand Hills"—from the northern deeper portion, which is studded with islands and is almost subdivided into three separate bays or lakes, connected by narrows, Lac Plat on the west, Clearwater Lake in the middle, from which the Winnipeg River issues at Rat Portage, and Whitefish Lake on the east.

Lac Seul nearly equals the Lake of the Woods in area, but occupies a long narrow irregular cleft, which resembles in character the lake-like reaches of English River, through which it joins the Winnipeg. In conclusion it is only necessary to remark that this district of Ontario is interesting as containing the highest waters of the Province.

This short account of the Lakes and Rivers of Ontario will facilitate reference in discussing, where possible, the geographical distribution of species, but it must be insisted that a systematic survey with this end in view is necessary before any authoritative statements as to the geographical limitation of species within the waters of the Province can be made.

NATURAL HISTORY OF FISH IN GENERAL.

Some little acquaintance with the elements of Ichthyology is necessary for the proper understanding of the scientific terms used by naturalists in describing Fish, and comparing them with each other. This may be acquired by the attentive examination of any common form like our ordinary Catfish or Bull-head (fig. 1).



Fig. 1.—COMMON CATFISH, OR BULLHEAD. $\frac{1}{4}$ (*Amiurus nebulosus*).

This fish is known to zoologists as *Amiurus nebulosus*, Le Sueur; its scientific name, like that of all other animals and plants, is a double name, this being necessary to indicate the particular species to which it belongs, for there are other kinds of catfish in North America sufficiently like this to be united with it in the same "genus" *Amiurus*. The specific name "*nebulosus*" was given by Le Sueur to this particular kind on account of its yellowish brown skin being often clouded by black, but the colouration is very variable, and there appears to be in the South a mottled variety sometimes regarded as a distinct species, but probably only a geographical variety or sub-species, the name of which is written *A. nebulosus* var. *marmoratus*.

All catfishes and their allies belong to a "family" called Siluridæ, which contains very numerous genera in the fresh waters of the tropics of both the Old and New Worlds, and which, with a host of other families possessed of a well formed bony skeleton, belongs to the sub-division TELEOSTEI of the class PISCES—one of the primary divisions into which all back-boned or vertebrated animals are divided.

With all other vertebrates then, the catfish shares certain essential characters, such as the possession of a brain and spinal cord protected by a skull and spinal column. Of these, the skull serves in addition for the protection of the nose, eyes and ears, as well as for masticating the food, and, in the fish, carrying out the movements

of respiration. The body is divisible into three regions, head, trunk and tail, which have different duties to discharge, and consequently differ in form and structure. The head lodges the brain and sense organs, secures food and shelters the gills; the tail is chiefly locomotive in function, while the trunk differs from both in being hollowed out so as to enclose the intestines and other viscera in the so-called body-cavity. From the trunk there project the two pairs of limbs or members corresponding to our arms and legs, but which are here called on account of their position and form the pectoral and ventral "fins."

These must be carefully distinguished as the "paired" fins, from the "unpaired" fins, which occupy the middle line of the trunk and tail, sometimes forming, in other fishes, a continuous fold as far forward on the under or ventral surface as the end of the intestine, but more frequently interrupted as in this species into dorsal, caudal and anal fins. There are in fact two dorsal fins in the Catfish, but the hinder of the two, instead of being supported by fin-rays, only includes within it some fatty tissue and is therefore called the "adipose" fin.

The fin-rays which support the fins are either hard or soft, *i.e.*, bony or spine-like in their whole length, or else fringed and jointed. For the purpose of distinguishing different species it is often desirable to count the number of rays in the various fins, and express them in a formula, using Roman numerals for the hard, and Arabic for the soft rays.

Thus, for this species, the formula is:

Dorsal,	-	-	-	I, 6.
Anal,	-	-	-	22.
Pectoral,	-	-	-	I, 6.
Ventral,	-	-	-	I, 7.

Certain apertures are to be noted, *viz.*: the mouth bounded by the upper and lower jaws and leading into the cavity of the mouth, which opens behind into the gullet and at the sides and floor by the gill-slits (five in number on each side) into the right and left gill or branchial chambers. The opening into the gullet is occupied by tooth-bearing bony plates above and below, the superior and inferior pharyngeal plates, and the inner opening of the gill-slits which are separated by the "gill-arches," are screened by a series of short projections on the concave surfaces of the gill-arches, those looking into the cavity of the mouth. The projections, which are often in other fish of considerable length, are called "gill-rakers," and serve to strain the water that flows out over the gills.

The latter occupy the gill-chambers and are attached in two rows to the outer convex faces of the four gill-arches. They are concealed by the gill-cover, a flap which bounds the gill-chamber externally, and the free margin of which can be applied tightly against the shoulder-girdle, the bones of which strengthen the wall of the gill-chamber below and behind. Supporting the main part of the gill-cover are the "opercular" bones, while a series of "branchiostegal rays" strengthen its lower free margin. Between the gill-openings on the ventral surface is the narrow unperforated floor of the mouth, which in many fishes forms a very narrow "isthmus."

The intestine opens posteriorly by a vent or anus in front of the anal fin. Behind the anus are the openings of the reproductive and urinary organs, separate in the females, but on a common urogenital papilla in the males.

The organs of the senses are visible to a certain extent from a surface inspection: thus the nostrils are two apertures on each side which lead into the front and hind ends of the olfactory sacs; round the mouth there are grouped eight sensitive feelers or "barbels" (not present in all fish): the eyes, although small, are evident enough, but the ears are entirely sheltered within the skull and have no communication to the outside. Finally there are certain small holes and slits chiefly on the head and along the lateral line of the body, which open into canals containing sense-organs in the skin, and generally protected by bony scales.

The Catfish, except for a few scales of this sort chiefly situated below the orbit (suborbital), is destitute of the ordinary scaly covering of a fish. Its skin is soft, and slimy, there being innumerable cells in the skin constantly forming this layer of mucus on the surface. But in most fish, the skin is strengthened by bony scales, which may have minute teeth projecting through the surface as in the Sharks and Sturgeons, or a continuous coat similar to tooth-enamel, as in the bony pike, but are generally covered entirely by the soft epidermis. These scales are usually either rounded (cycloid) or with a jagged hinder edge (ctenoid), fig. 2. Their number in longitudinal or vertical rows is often used for distinguishing

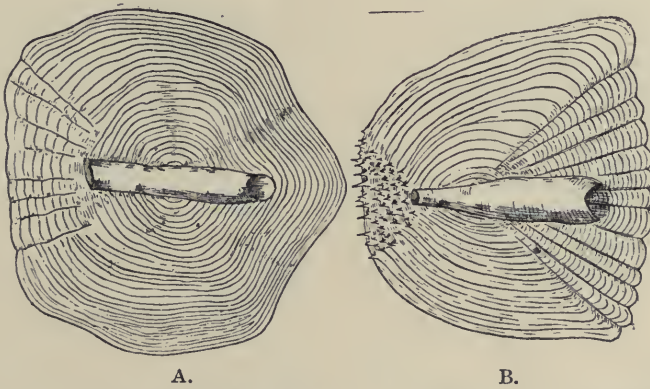


Fig. 2 —A, CYCLOID SCALE FROM LAKE HERRING. B, CTENOID SCALE FROM ROCK BASS. 6/1.

species, especially those that are perforated for the organs of the lateral line referred to above. The formula for the number of scales is then written L. 63 (as *e.g.* in the Common Sucker), but if it is desirable to take into account the number of longitudinal rows above and below the lateral line, these are counted in an oblique row from the beginning of the dorsal fin downwards to the lateral line and from that towards the ventral surface, the formula being then expressed (as *e.g.* in the Lake Mullet) scales 6—42 to 48—5, the figures 42-48 indicating the number of scales in the lateral line.

Certain terms used in classifying fish are taken from the skeleton; a short description of the various parts of the Catfish skeleton is therefore inserted. It is divided into the skeleton of the head, of the trunk, and of the paired limbs. The skeleton of the head is again sub-divided into the cranium proper—which

contains the brain and shelters the ears—and the jaws and gill-skeleton. The shape and the position of the various bones entering into the cranium may be seen from fig. 3, A. and B. In many fishes the cranium is largely cartilaginous,

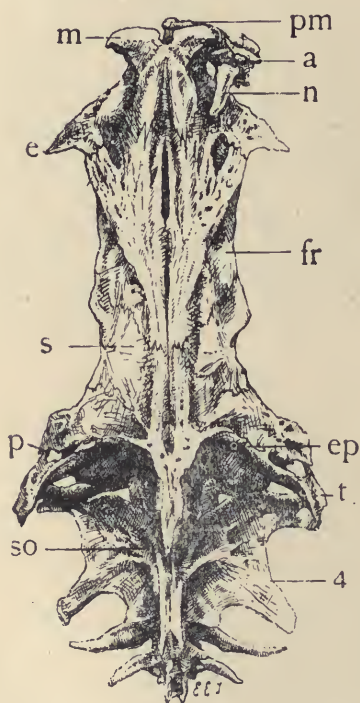


Fig. 3 A.—CRANIUM AND ANTERIOR VERTEBRÆ OF CATFISH FROM ABOVE.

M, mesethmoid; pm, premaxilla; a, antorbital; n, nasal; e, parethmoid; fr, frontal; s, sphenotic; p, pterotic; ep, epiotic; t, supraclavicle; so, supraoccipital spine; 4, transverse process of fourth vertebra.

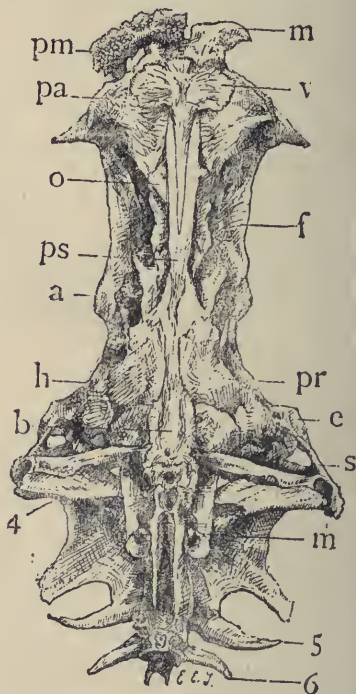


Fig. 3 B.—CRANIUM AND ANTERIOR VERTEBRÆ OF CATFISH, FROM BELOW.

Pm, premaxilla; m, mesethmoid; v, vomer; pa, parathmoid; o, orbitosphenoid; f, frontal; ps, parasphenoid; a, alisphenoid; pr, prootic; h, articular surface for hyomandibular on sphen, and pterotics; b, basioccipital with exoccipitals on either side; s, supraclavicle; m, "malleus;" 4, 5 and 6, transverse process of 4th, 5th and 6th vertebrae.

gristle or cartilage being only partly replaced by bones. In the Catfish, however, there is little of this left in the adult fish. Attention is called to the position of the vomer the teeth on which sometimes furnish easily accessible characters to the systematic zoologist. It is applied to the under surface of bones formed in cartilage, the foremost of which, the middle ethmoid, carries in front the premaxillæ, tooth-bearing plates which form a considerable part of the margin of the upper jaw on each side and which can in some fish be thrust out from their support or "protracted." The rest of the margin of the gape above is usually formed of the

maxillæ, but these are small in the Catfish and merely serve to support the large barbels. Fig. 4 illustrates how closely the jaws are related to the hyoid arch,

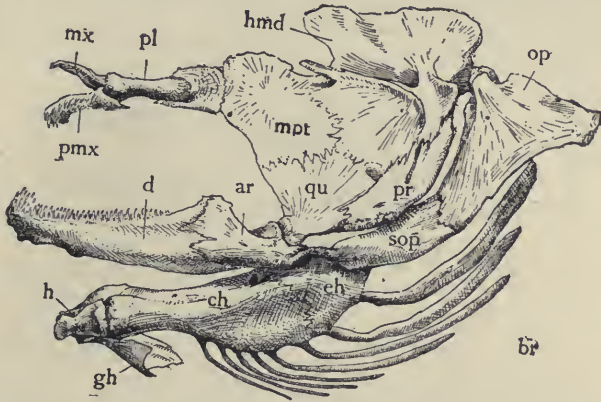


Fig. 4.—JAWS AND HYOID ARCH OF CATFISH, FROM THE SIDE.

Mx, maxilla; pmx, premaxilla; pl, palatine; hmd, hyomandibular; op, operculum; mpt, metaptergoid; qu, quadrate; pr, preoperculum; sop, interoperculum; d, dentary; ar, articular; h, hypohyal; gh, glossohyal; ch, ceratohyal; eh, epiphyal; br, branchiostegal rays.

which is similar in general character to the following gill-arches, but which is altered in form by reason of its carrying the jaws and the skeleton of the gill-cover. Indeed the jaws are regarded as another similar arch in front of that, formed of an upper palato-quadrate and a lower mandibular segment, part of the latter carrying teeth (dentary) and part forming a joint with the quadrate, but all suspended to the skull by the hyomandibular, the upper part of the hyoid arch. The lower part of this arch is sub-divided as shown in the figure, and forms a bony support for the tongue, while its hinder margin performs, with the attached branchiostegal rays, a similar function for the free part of the gill-cover, these rays being related to it in a manner somewhat similar to that in which the bones of the gill-cover—preoperculum, operculum proper, and interoperculum (there is no suboperculum in the Catfish)—are related to the hyomandibular part of the arch.

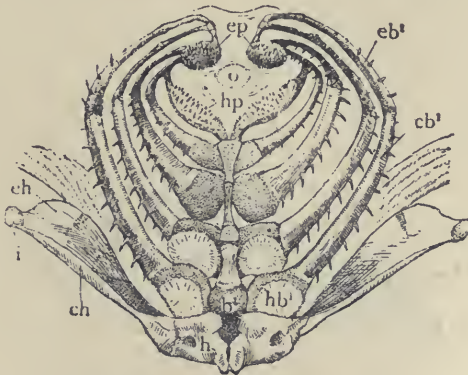


Fig. 5.—VISCERAL SKELETON OF CATFISH.

H, hypohyal; ch, ceratohyal; eh, epiphyal; i, interhyal; b¹, first basibranchial; hb¹, cb¹, eb¹, hypo-ceratobranchial and epibranchials of first arch; o, oesophagus; ep and hp, epi- and hypopharyngeal tooth plates.

The mode in which the skeleton of the gill-arches proper is sub-divided and the relationship to the superior and inferior pharyngeal (epipharyngeal and hypopharyngeal) tooth-plates, may be gathered from fig. 5.

The vertebral column is formed of vertebræ, each of which has a rounded body hollowed out on both faces (amphicœlous), from which there projects an upper arch protecting the spinal cord and terminating above in an upper or neural spinous process (fig. 6). Between the neural spines are inter-spinous bones which

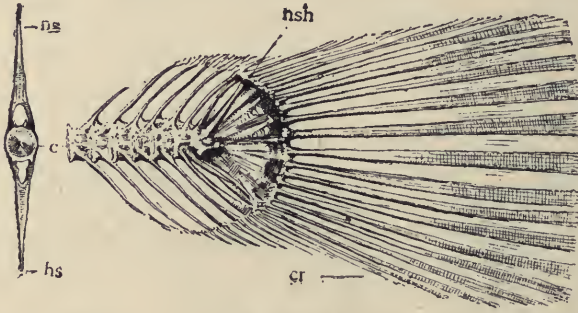


Fig. 6.—CAUDAL VERTEBRA AND CAUDAL END OF VERTEBRAL COLUMN IN THE CATFISH. Ns, neural spine; c, vertebral centre; hs, hæmal spine; nsh, bony sheath of the notochord; cr, caudal rays.

carry the fin-rays of the unpaired fins. In the tail region there are also ventral arches and spines which protect the blood-vessels running to the tail, and the ribs further forward in the trunk region correspond to these, although they do not meet in the middle line below.

The caudal fin of the catfish appears quite symmetrical, and in some species (plate 5), is equally forked; a close inspection of the skeleton, however, shows that it is chiefly situated on the lower surface of its axis, which is here abruptly turned up. This apparent symmetry (homocercal condition) is absent in some fish like the Sturgeon, (plate 1), where the vertebral column turns up, sub-dividing the tail very plainly into two unequal lobes (heterocercal condition).

In the catfish some anterior vertebræ are united very intimately to each other, and to the skull and pectoral arch, in consequence of certain peculiar connections between the ears and the air-bladder, but this is not usual in fish.

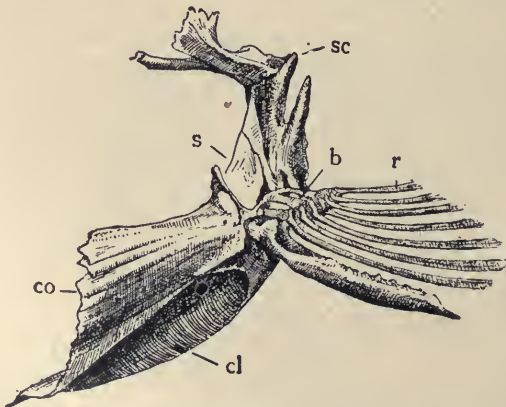


Fig. 7.—PECTORAL GIRDLE OF CATFISH FROM BEHIND. Co, coracoidal, s, scapular portion of primary shoulder-girdle; cl, clavicular, sc, supra-clavicular portions of secondary shoulder-girdle; b, basal elements, r, rays of the fin-skeleton.

On the other hand the union of the pectoral arch to the skull is not uncommon, and is effected by a three-pronged bone, the supraclavicle or supra-scapula (fig. 7). The arch is formed of right and left halves which fuse with

each other in the middle line below, but each half at an early date is formed of two elements, a primary element formed in cartilage, and a secondary larger one formed beneath the skin. The so-called basal elements of the pectoral fin correspond in part to the limb bones of higher animals, but they are unimportant in size as compared with the fin-rays, the foremost of which can be set and used as an effective weapon by the catfish.

Systematic zoologists rarely employ the form of the viscera to any extent in framing comparative descriptions of different species. The following points as to the arrangement of the viscera should, however, be noted.

The intestinal canal is a comparatively short tube which is marked off into three regions, the stomach, small intestine and large intestine. All these parts are supported to the wall of the body-cavity in which they lie by the mesentery, and another part of the same membrane the "peritoneum" also lines the body-cavity. Its colour may vary from black to silvery. Connected either permanently, or in the young fish merely temporarily, with the gullet is the air-bladder, a part of the intestine which serves as a float, and may have other subsidiary functions.

The stomach may merely be a slightly enlarged part of the intestinal tube, but may have a blind projection as in the catfish, "cæcal type," or be bent into U-shaped form, "siphonal type." It is separated from the first part of the small intestine by a muscular valve, the pylorus, from which a number of blind tubes attached to this part of the intestine in many fishes (but not the catfish) derive the name of *pyloric cæca*. Opening into this part of the intestine also is the bulky liver, which is provided with a large gall-bladder.

The heart in the catfish is situated far forwards in the region of the throat. It collects the blood from the veins and drives it up the gill-arches, from which it flows out at the top into the dorsal aorta as arterial blood. Behind the air-bladder is the kidney, formed of right and left halves intimately united, and connected by folds of mesentery with the dorsal surface of the body-cavity are the ovaries in the female (the roe) and the testes (the milt or soft roe) of the male.

As a general rule the eggs of fish are fertilised after they have been deposited by the female, and it may be observed that the fewer the eggs are in number the more anxiously are they looked after by one or both parents. The various species of catfish all appear to be attentive to the fry for some time. Some notions as to the development from the egg may be gathered from fig. 8. While still within the body of the mother, the egg measures about one-eighth of an inch in diameter; it has two coats, the outer of which is penetrated by minute canals through which the necessary nourishment for the growth of the egg passes inwards. When the egg is laid, the space between the two coats increases in size and the two constituents of the yolk) the formative yolk, which gives rise directly to the body of the embryo, and the large food-yolk which is utilized as food by the embryo) formerly evenly distributed, now tend to accumulate at opposite poles. The formative yolk with its contained nucleus begins to divide, the result being a disc of small cells lying on the surface of the food-yolk. The cells gradually extend over the whole of the egg, those at the formative pole arranging themselves into the three layers of the embryo, which already during the second day assumes a fish-like form. It is from these three layers that all the organs of the fish are developed. The embryo does not escape from its shell till the sixth day, when, although only one-third of an inch in length, development has already advanced to a considerable extent. Thus the heart is seen in front of the yolk-sac, from the vessels of which it collects the blood enriched by contact with the yolk, and propels it by way of the gill-arches throughout the entire system. After all the food is

extracted from the yolk-sac, the latter is absorbed, and the young fish begins to feed for itself. At the end of three months the adult form is attained, the fish being then hardly an inch in length.

The length of time which the hatching process takes, and the rapidity with which the developmental process runs vary much in different species of Teleosts and is largely dependent on the temperature of the water, spawn deposited in

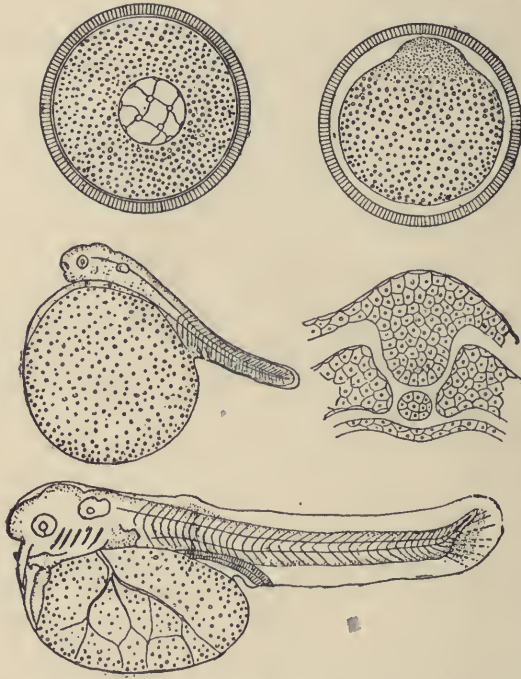


Fig. 8.—DIAGRAM OF SEVERAL STAGES IN DEVELOPMENT OF CATFISH. (Modified from Ryder).

1, ovarian egg; 2, egg in which formative yoke has separated to upper pole; 3, embryo of second day; 4, section through such an embryo, showing epiblast with nervous system above, hypoblast below, and between them the mesoblast and the notochord; 5 embryo of sixth day.

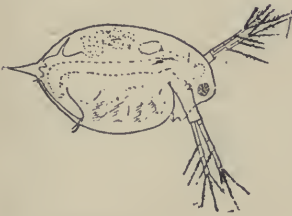
the cold water of October and November not hatching till the following spring in contrast with the rapid process depicted above, which occurs in the early summer. The great difference in size which is to be observed between the eggs of different species is not merely proportional to the size of the species, although, as we shall find, large varieties of brook trout lay larger eggs than small varieties; it is largely a question of the relative amount of food-yolk provided for the embryo, and may be therefore also attributed to the hatching habit of the species, the longer or shorter time which the embryo takes to burst the egg-shell and to begin to feed for itself.

The following table gives the number of eggs that have been counted to a quart in different species:—

Mackerel	1,267,728
Pickrel (<i>Stizostedium vitreum</i>).....	120,000
Whitefish	36,000
Striped Bass.....	24,363
Brook Trout.....	11,000
Lake Trout	8,720
Atlantic Salmon	4,272
Winninish	3,500

Teleosts differ very much in the nature of their food and in their manner of securing it. Some, like the Catfish, Sturgeon and Suckers, are bottom feeders, and such are often furnished with protractile lips, the better to secure the molluscs, worms, aquatic insect-larvæ or fish-spawn on which they live. Others, like the Whitefish, are dependent on the crustacean life with which our fresh waters swarm, (fig. 9), the young living on the minute *Entomostraca*, the adult on the

FIG. 9.

*Asellus communis*. x 2.*Gammarus* sp. x 3.*Branchipus vernalis*,
swimming on its back. x 3.*Daphnia pulex*. x 18.*Cypris candida*. x 16.*Cyclops* sp. x 12.

larger shrimp-like forms. Others again, more agile, leap to secure the insects on which they feed, while many are carnivorous, feeding on other smaller species of fish. Unquestionably the microscopic life of the fresh waters is the prime source of much of the food of our fresh water fishes, and most comprehensive investigations are therefore being carried on in regard to the life of the larger bodies of fresh water in Europe with the object of ascertaining the conditions which appear favourable to the abundance of food-material of this character, and the species which appear to contribute most to the sustenance of the fish.

As the smaller species of fish serve as food for the larger rapacious forms, which may thus be regarded as inimical to them, so also the various fish-eating birds and reptiles may be regarded as enemies of the class. There are, however, some more insidious enemies which are deserving of mention—the various fish-eating insects, and the various parasites, animal and vegetal, which afflict fish.

Amongst the former are specially to be noted the larger water-beetles, *Dytiscus* and *Acilius*, which may completely devour small fish by the aid of their rapacious jaws; the larger and smaller water-bugs and water-boatmen, *Belostoma*, *Notonecta* and *Ranatra*, which attack fish by grasping them with their powerful front legs and then sting them and suck their blood by their sucking proboscis.

Among the latter are to be distinguished the crustacean parasites of the gills (fig. 10) or of the surface of the body, which may become so numerous as to cause death (p. 446). Again there are various worm parasites (no species of fish is exempt from its share) which, however, appear rarely to cause any serious mortality. In many cases unripe stages of such worm parasites occur in fish, which only reach their full development in fish-eating birds, but one



Fig. 10.—*Ergasilus* with egg-sacs from gills of sunfish. $\times 10$. *Achtheres* from gills of catfish $\times 6$.

species of such immature forms occurring in the Pike, and possibly also in some Salmonoids, is the larva of *Bothriocephalus latus*, the broad tape-worm of man. It is only found abundantly in those northern countries where fish are eaten raw. Among the worm parasites may be mentioned certain thread-worms which (like the guinea worm) live in the skin of their host, and may often cause serious abscesses in the fins of affected fish. Certain leeches (*Piscicola*) also may attach themselves to the skin and suck the blood of their victims with fatal results.

Obscure diseases of fish of epidemic character have not been properly investigated yet. Some are no doubt attributable to bacteria, others, like the salmon disease, to more visible fungus-growths such as *Saprolegnia*, but the subject of the wholesale dying-off of fish is one which requires further looking-into.

PRESERVATION OF FISH.

Should any reader of this report desire information as to any particular variety occurring in his locality, he is invited to send specimens to the author at the University of Toronto. These ought to be suitably preserved before shipment, either by putting on ice when caught and shipping promptly, or by immersion in a strong pickle formed of $1\frac{1}{2}$ lbs. salt, $\frac{1}{4}$ lb. saltpetre and $\frac{1}{4}$ lb. boracic acid to the gallon of water, or in strong spirits of wine. The preservative fluid used should be poured into the mouth, and if possible injected into the vent and through a small slit into the body-cavity. When alcohol is used as a preservative fluid it should be diluted with one-third water, so as to obviate shrinkage of the tissues, and changed once or twice before shipment. The label accompanying a specimen should always give the exact place and date of capture, and any other information which occurs to the collector, such as colouration when fresh, which is especially desirable if alcohol is used as the preservative fluid.

NATURAL HISTORY OF ONTARIO FISH.

The Class of the Fishes is divided by zoologists into six sub-classes, containing :—

- I. The Lancelet or Amphioxus.
- II. The Lampreys and Hag-fishes.
- III. The Sharks and Rays.
- IV. The Ganoid Fishes.
- V. The Teleost or Bony Fishes.
- VI. The Dipnoi or Lung-Fishes.

Of these the 1st and 3rd are not represented in fresh waters, and need not concern us here. With few exceptions our fish belong to the fifth sub-class.

SUB-CLASS II.—CYCLOSTOMI.

The fishes that belong to this group are eel-like forms of parasitic habits, attaching themselves by means of their circular mouths to larger fish, of which they suck the blood. Their skeleton differs very much from that of other fish : it consists of a brain-case formed of cartilage, supports for the gills of the same material, and a notochord running underneath the spinal cord. There are no true jaws, nor limbs, nor ribs as in other fish. One of the families—the Myxinidæ—is entirely marine, the other—the Petromyzontidæ—has some fresh-water species.

They are at once recognized by the circular sucking-mouth (fig. 11), the horny teeth within it, the single nostril on the top of the head, and the separate openings of the seven gill-pouches on each side of the head.

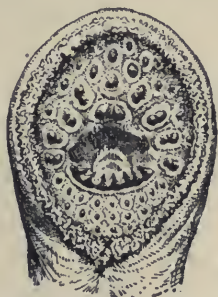


Fig. 11.—MOUTH OF RIVER LAMPREY. (*Petromyzon concolor*.)

The only species in Ontario waters is *Petromyzon concolor*, the Silvery Lamprey, a small species of no economic importance found in the Great Lakes and living partly as a parasite of the lake Sturgeon, to which it attaches itself and forms

raw sores by the aid of its rasp-like teeth. They ascend brooks in spring to spawn, and it is probable that the young are at first toothless and blind, living in sand until they attain a considerable size. Further information is desirable as to this Lamprey from a scientific point of view, but it is of no economic importance, whereas the Marine Lamprey, which attains a size of three feet, was formerly much valued as an article of food. It ascends rivers in the spring to spawn and resembles, therefore, in this respect its representative in the lakes.

SUB-CLASS IV.—THE GANOIDEI.

This group embraces but few living forms—most of them North American—but very many fossil representatives are known, so that the living species are really only to be regarded as straggling survivors of a formerly numerous group.

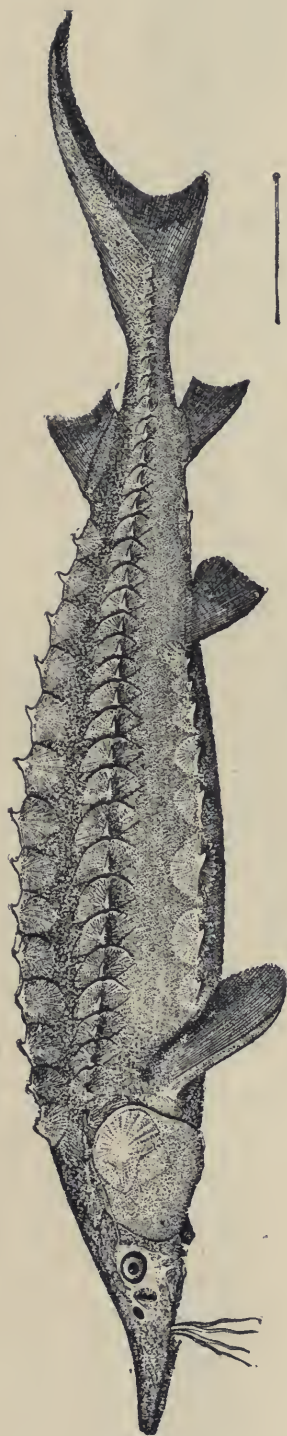
The name Ganoid is taken from the enamelled scales so well developed in the bony pike. In many respects the structure is intermediate between that of the Sharks on the one hand, and that of the Teleosts and Lung-fishes on the other.

Two divisions of the group are recognized—the cartilaginous and the bony Ganoids. Both are represented in Ontario, the one by the Sturgeons (family ACIPENSERIDÆ), the other by the Bony Pikes or Gar Pikes (LEPIDOSTEIDÆ) and the Mud-fishes (AMIIDÆ).

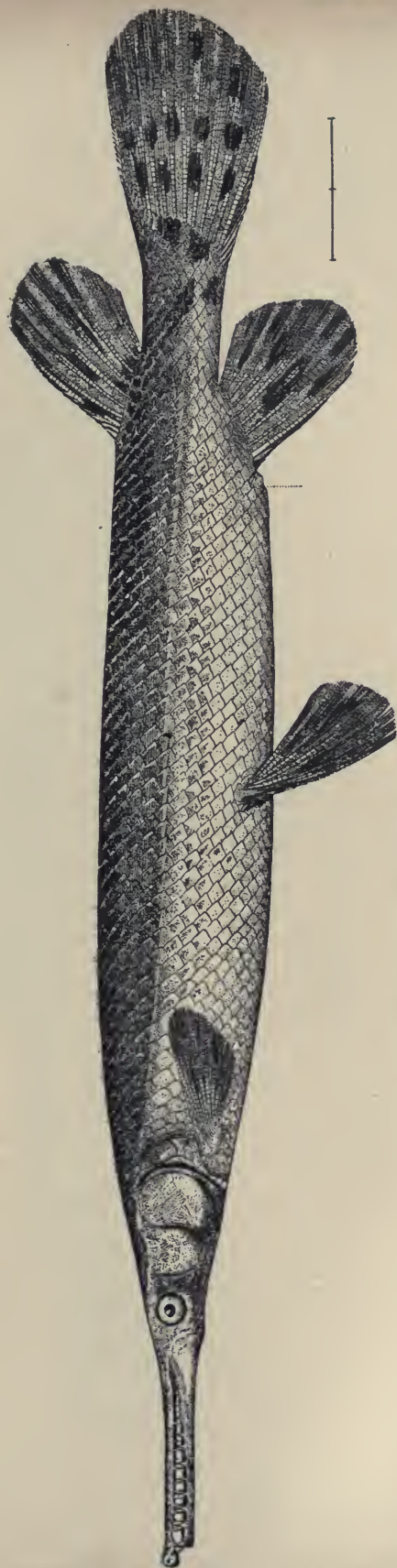
Of the various families the Sturgeons (*Acipenseridæ*) approach most closely to the Sharks in their structure. Thus the skin possesses minute bony plates roughened with teeth which recall the shagreen of the Shark. The skeleton is cartilaginous throughout, although the skull is encased by a series of flat bones formed from the skin, and similar in this respect to the bony shields on the trunk. The latter are very characteristic for the family; they are in five rows—a median dorsal series and a lateral and ventral series on each side—all are keeled and provided with a spine. The snout or rostrum, which is of considerable size in the allied paddle-fishes (*Polyodon*) and shovel-nosed Sturgeons (*Scaphirhynchus*) of the Mississippi Valley, is conical in form and carries in front of the mouth, which is on the under surface, a row of four barbels. The Sturgeons are bottom feeders, the position of the mouth and its protractile lips are therefore very advantageous for this kind of life. The air-bladder is of large size and has a wide opening into the gullet.

The pectoral and ventral fins are situated low down, the latter far back, but still in front of the dorsal and anal fins, which are similar in form and are separated from the caudal fin by a slenderer part of the tail the “caudal peduncle.” The caudal fin is unequally divided by the continuation of the vertebral column, and is distinctly “heterocercal.” The gills are, however, much more like those of the Teleost, consisting of a double row of gill-filaments attached to each of the four gill-arches, and, in addition, of a single row attached to the hyoid arch, the so-called opercular gill. The free edges of these look into the gill-chamber, which is enclosed by an operculum, in which, however, only two of the four bones usual in the Teleosts are found. There are no branchiostegal rays. Another rudimentary gill (the pseudobranch) is situated within a rudimentary gill-slit between the jaw and the hyoid arch, known as the “spiracle,” and common in the Sharks and Rays. Although the pseudobranch is frequently present in the Teleosts, the spiracle itself is always absent, and it is hardly to be detected in the other families of Ganoids referred to.

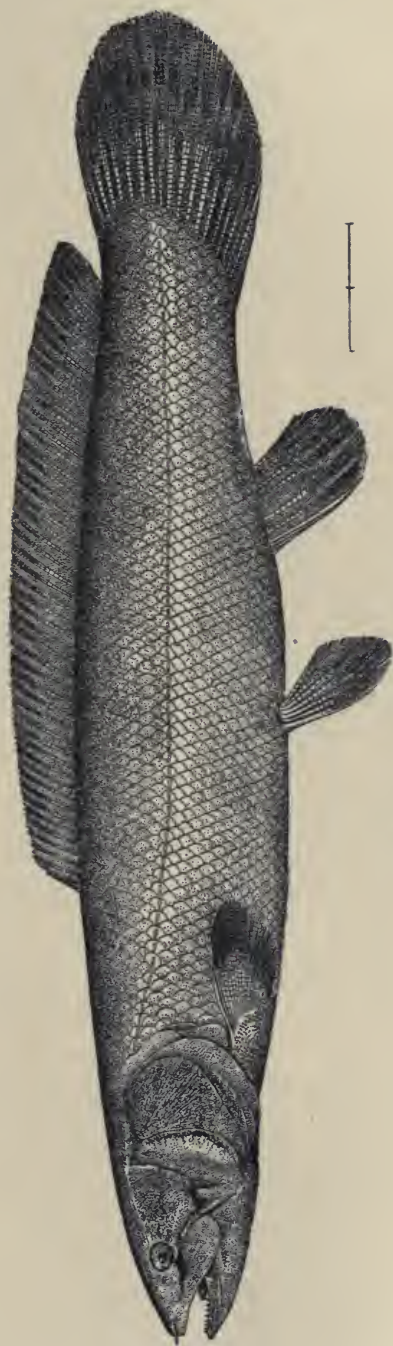
The only member of the family occurring in the Province is the Lake Sturgeon or Rock Sturgeon (*Acipenser rubicundus*). Like the other members of the genus, this species attains a considerable size, up to six feet, and to a weight



THE LAKE STURGEON (*Acipenser rubicundus*).



THE SHORT-NOSED GAR-PIKE (*Lepidosteus platystomus*).



THE BOWFIN OR MUDFISH (*Amia calva*).

of from 50 to 100 pounds. Most of the other species are marine forms that only ascend rivers to spawn, but this one is permanently confined to the lakes. It varies much with age, the young having a slender long snout, which becomes quite blunt in the adult, also sharp hooks on the bony shields, which become smooth with age, while the ventral shields grow smaller and finally disappear. The dorsal shields average 13 in number (11-16), the laterals 34 (30-39), the ventrals 8-10, while the fin-formula is D 35, A 26.

This species owes its scientific specific name to the reddish colour of the sides of the body; the dorsal surface, however, is dark in hue.

The Sturgeon is hardly appreciated at its true value in Ontario, the greatest proportion of the fish caught in Canadian waters being shipped to the States for sale. It is a fish nevertheless, of high economic importance, its flesh being of excellent nutritive quality and good although somewhat meaty flavour. The sounds or air-bladders furnish the best quality of isinglass, and the roe the expensive delicacy "caviare," but these accessory products are not properly taken advantage of in the Province.

On the whole the Sturgeon frequents comparatively shallow water, and is therefore oftener taken in pound-nets than in gill-nets (p. 464) but it is most easily captured in the spring of the year at spawning-time when numbers congregate about the mouths of rivers. The spawning time may be as early as the middle of May, but in Lake Superior it is delayed till July. At this time the habits of the fish render them comparatively defenceless; they run in schools, depositing their spawn along seams in rocky ledges as has been observed at the head of the Niagara River, the females followed by the males, and both rolling over and over on the bottom, and then suddenly leaping from the water and falling back with a splash. They can often be successfully gaffed, or taken by hauling a grapnel hook along the bottom—a method which must wound many fish which afterwards escape; finally they are sometimes speared even in comparatively deep water (25 to 30 feet) by Indians, by means of a long spear with detachable handle, the iron of which has a line fastened to it.

The eggs are of large size (one-ninth of an inch in diameter) and very numerous (from one to two millions in a large fish). Comparatively few of these can meet with the necessary conditions for their successful development, as the adults are not met with in the numbers which might be anticipated.

A comparatively short time—four to five days—suffices for the hatching process, the embryos escaping at the end of this period.

Nothing is known of the food of the embryo fish, but it is undoubtedly formed of minute forms of life which afterwards give place to the shell-fish (*Physa*, *Planorbis*, *Limnæa*, *Valvata*, etc.) on which the adult feeds.

Unlike the Sturgeons, the bony Ganoids are utterly worthless as food, but as before remarked, they have a high claim to scientific interest. They approach the ordinary bony fishes in that the gill-cover has all the four bones, and the branchiostegal rays. The air-bladder is almost lung-like in character and accounts for the circumstance that the fish are able to live out of water for a very considerable time, and are often to be seen leaping and snapping air.

Externally the difference between the Gar-Pikes and the Bowfins or Mud-fishes is very marked, for the enamelled coat of armour of the former is far more unlike the scaly coat of an ordinary fish than is the skin of the latter, but in their internal structure they offer a very close agreement.

Three species of Bony Ganoids occur in Ontario, two Gar-pikes (*Lepidosteus osseus* and *L. platystomus*) and the Mudfish (*Amia calva*).

The Gar-pikes have an elongated, almost cylindrical body covered with the

obliquely arranged lozenge-shaped scales which are so characteristic of the genus. The jaws are elongated into a beak which is twice the length of the head in the long-nosed species (*L. osseus*), but shorter and broader in the other species. In both the beak is very well provided with teeth, there being several rows of small teeth and one row of larger size.

As in the Sturgeon, there is a hyoidean half-gill attached to the deep surface of the gill-cover, but the spiracles do not open to the outside and are small in size. One of the peculiarities of the skeleton is that the vertebræ instead of having cup-like surfaces as in the *Amia* and the ordinary bony fishes are united by a ball and socket joint, the socket being on the hinder surface of each vertebra.

The remaining representative of this important group, *Amia calva*, is of common occurrence in the Great Lakes and sluggish waters southwards. In various places it is known under different popular names:—Lake Dogfish from its voracity, Mudfish from the waters it frequents, Bowfin from the characteristic long dorsal. In shape the Mudfish somewhat recalls the Shad tribe, and it is perhaps to this division of the bony fishes to which it is most nearly allied. All naturalists are agreed that the *Amia* is the leading representative of an extinct transition group between the ancient Ganoid fishes and the modern Teleosts.

From the latter, however, there are still many points of distinction; such as the completeness of the cartilaginous skull under the outside dermal bones encasing it, the presence of a similar dermal bone between the lower jaws and of two peculiar file-like structures attached to the hinder edge of the gill-opening.

The general colouring of the Mudfish is dark olive-green above, pale below, but the males are marked by a round black spot bordered by yellow at the base of the caudal, which is absent in the females.

SUB-CLASS V.—TELEOSTEI.

The general structure of the Teleosts has been described on p. 429; it now remains to give some details as to the peculiarities of the various subdivisions of the group.

They are primarily classified into Physostomous and Physoclistous Teleosts:—i.e. those in which the air-bladder opens into the gullet in the adult, and those where it is completely shut off. Even in those forms where the air-bladder does open by a tube into the gullet, its importance as a breathing organ is quite unlike that in the Bony Ganoids, and its functions are therefore regarded as being more closely related to the locomotion of the fish. Those Teleosts in which the air-bladder is closed are regarded as further removed from the Bony Ganoids than the others, and it is therefore desirable to treat of the latter first.

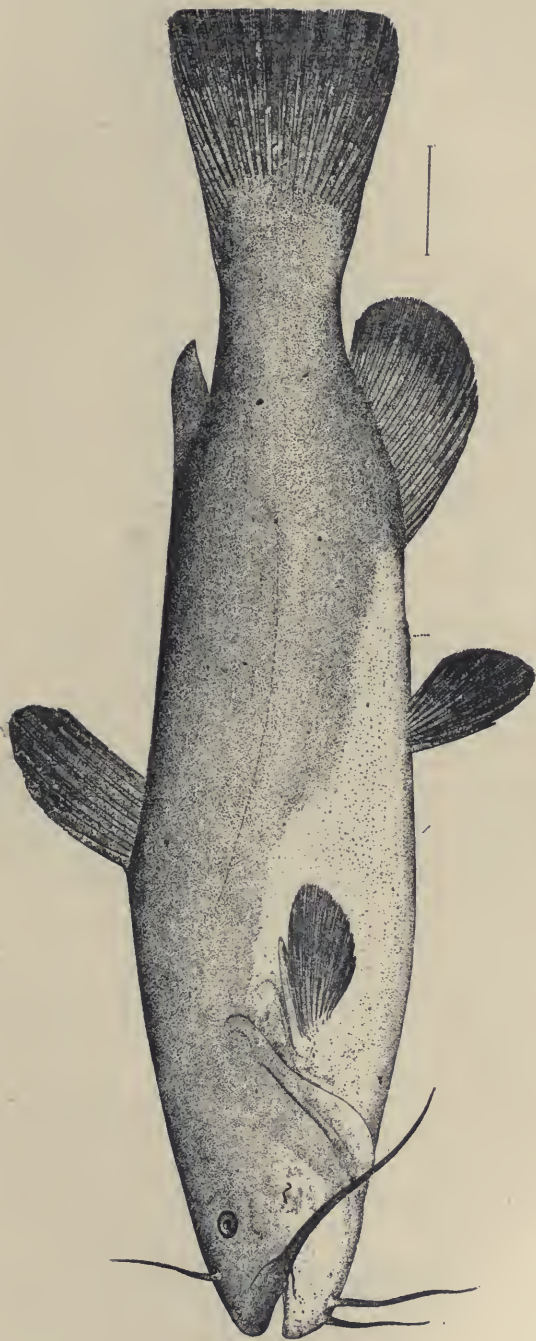
PHYSOSTOMI.

In this division the scales are usually cycloid, and the fin-rays (with the exception of one or more anterior ones, modified into defensive spines) soft.

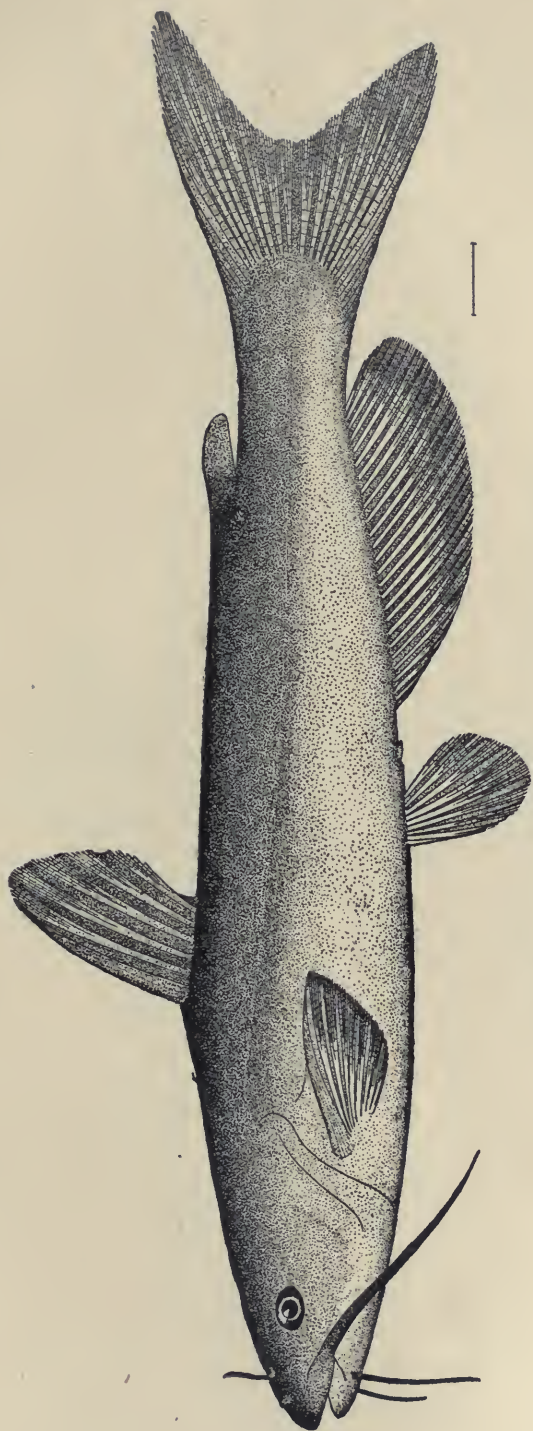
The most primitive families are undoubtedly the Catfishes, Suckers and Minnows, and they all agree in possessing the connection between the air-bladder and the ear referred to at p. 434, besides other anatomical features which it is impossible to describe.

A sufficient account has been given above of the structure of a typical representative of the family SILURIDÆ, and it only remains to make a brief reference to the other species of the family that occur in Ontario.

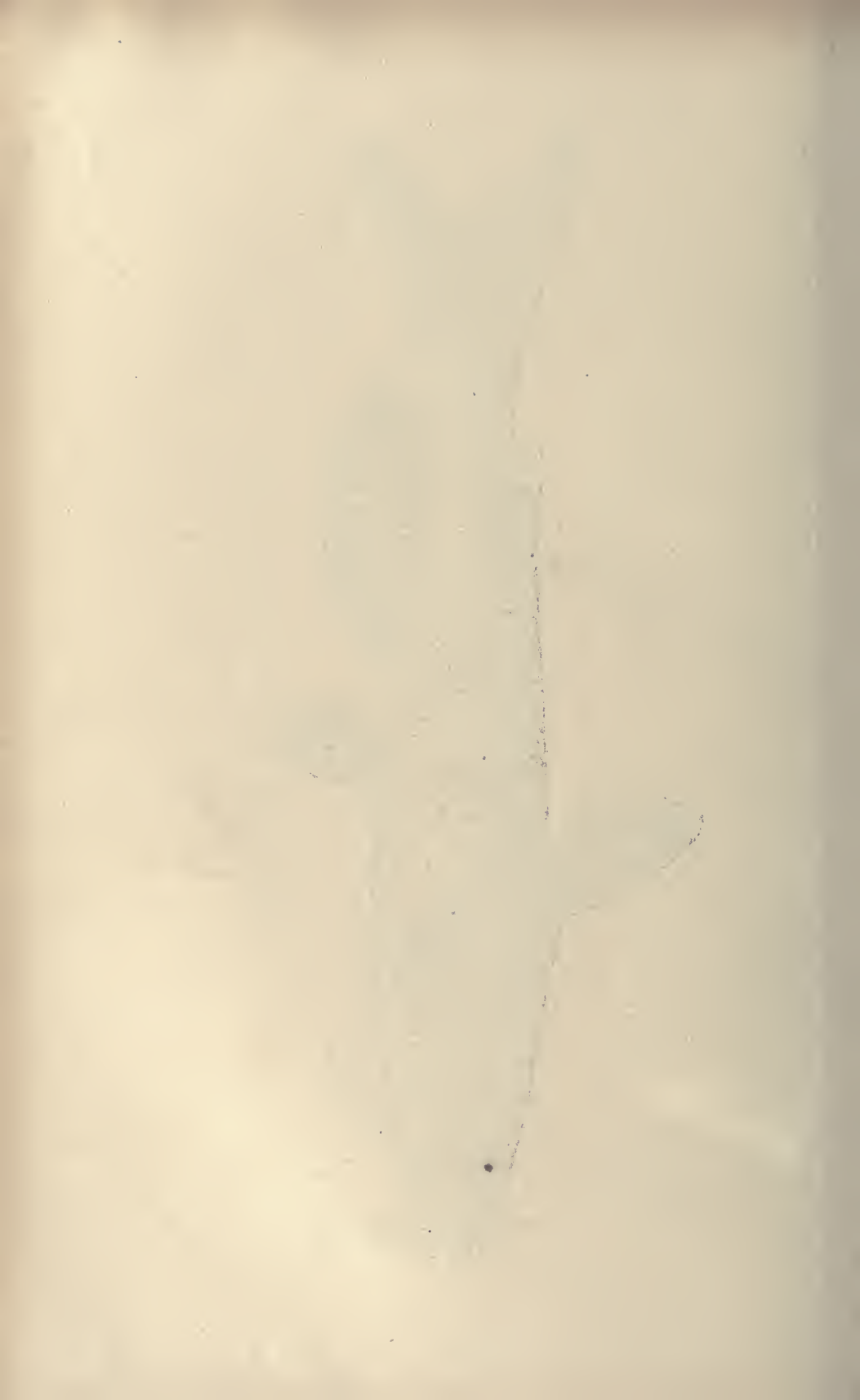
In addition to the ordinary Catfish (*Amiurus nebulosus*), two other species occur within the Province—*A. vulgaris*, which differs in being somewhat slenderer and in having the lower jaw projecting beyond the upper, and

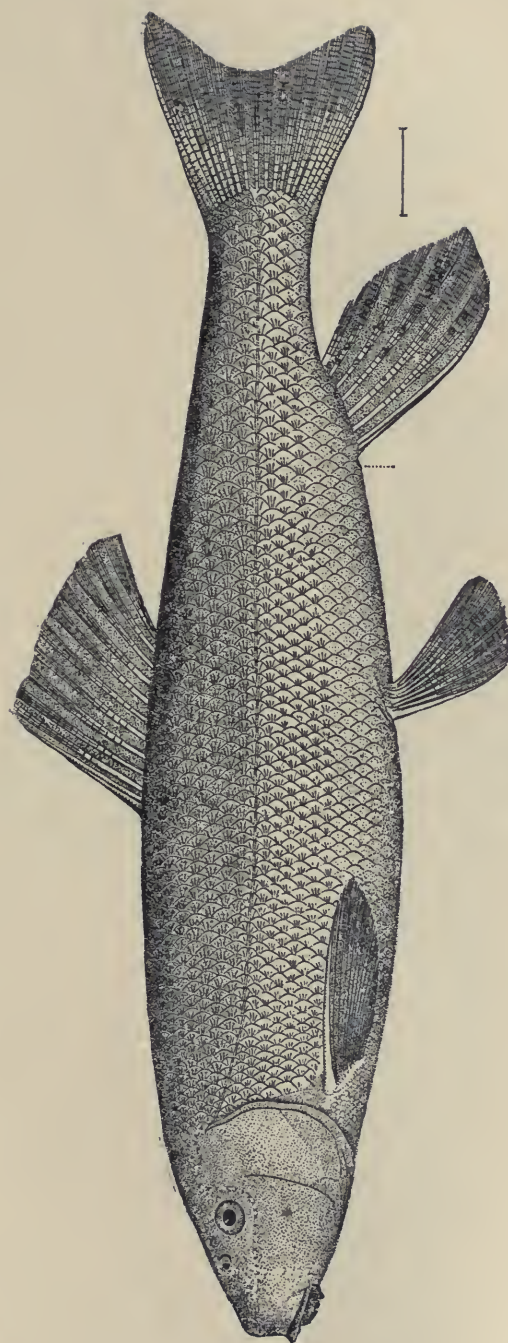


THE BULLHEAD (*Ameiurus vulgaris*).

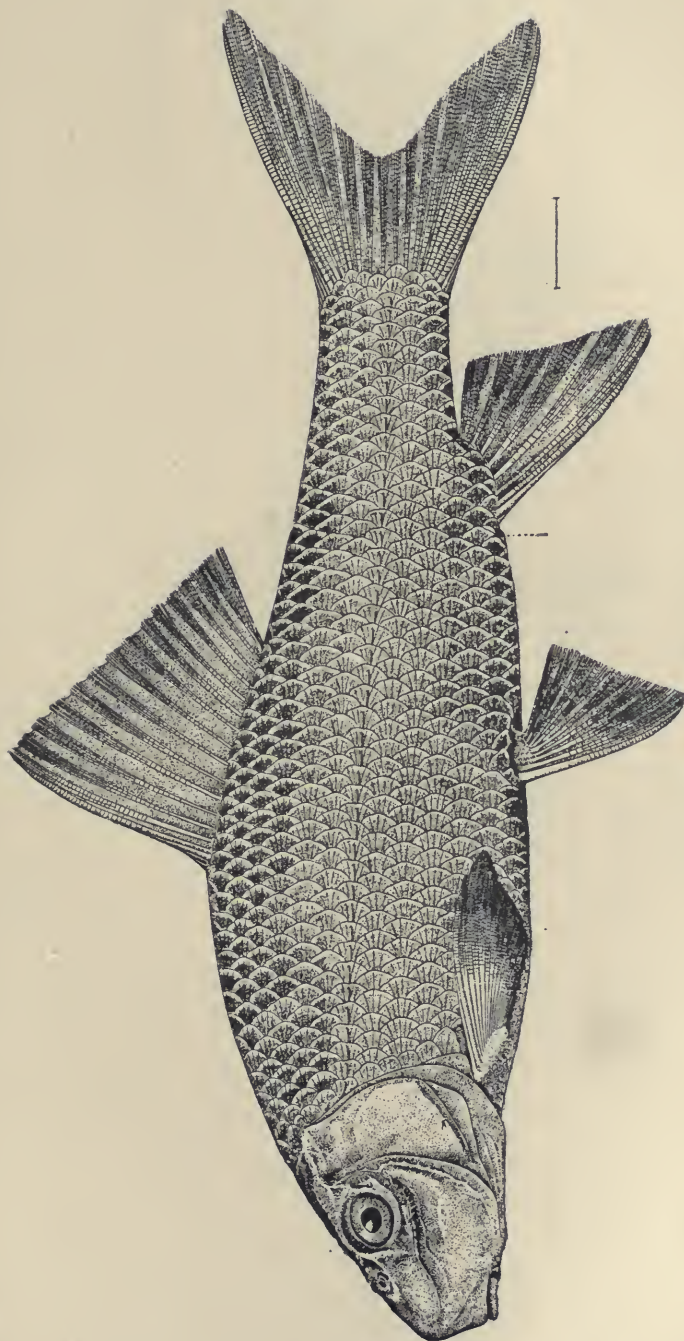


THE GREAT FORK-TAILED CATFISH (*Aminurus nigricans*).



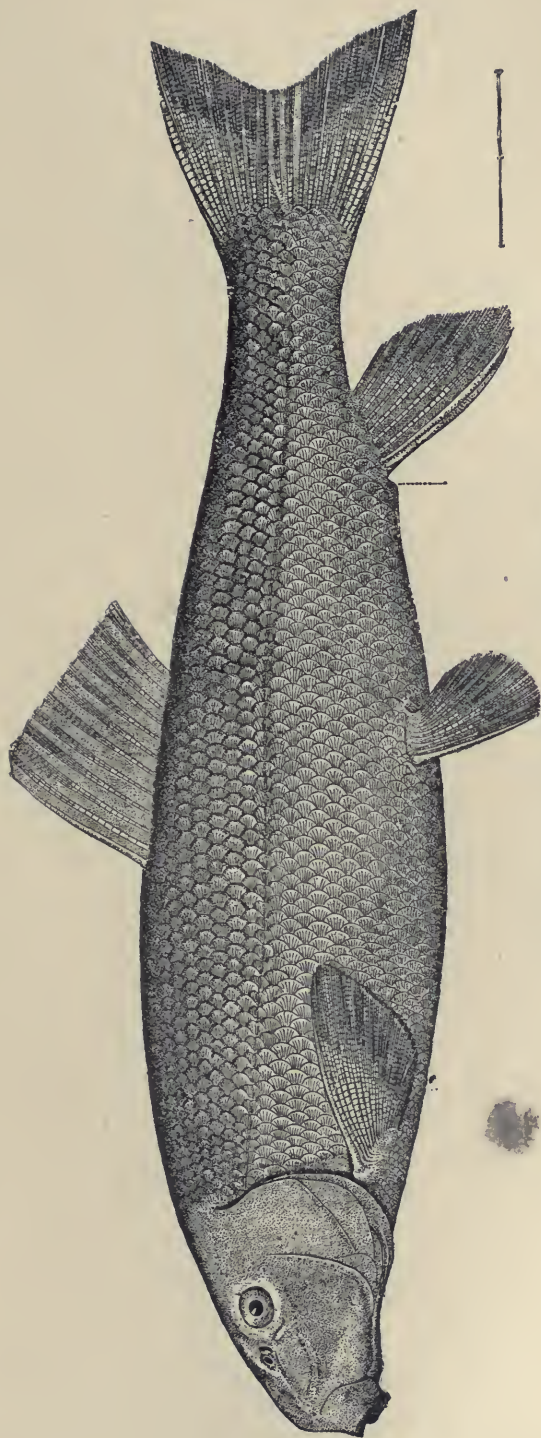


THE COMMON SUCKER (*Catostomus teres*).



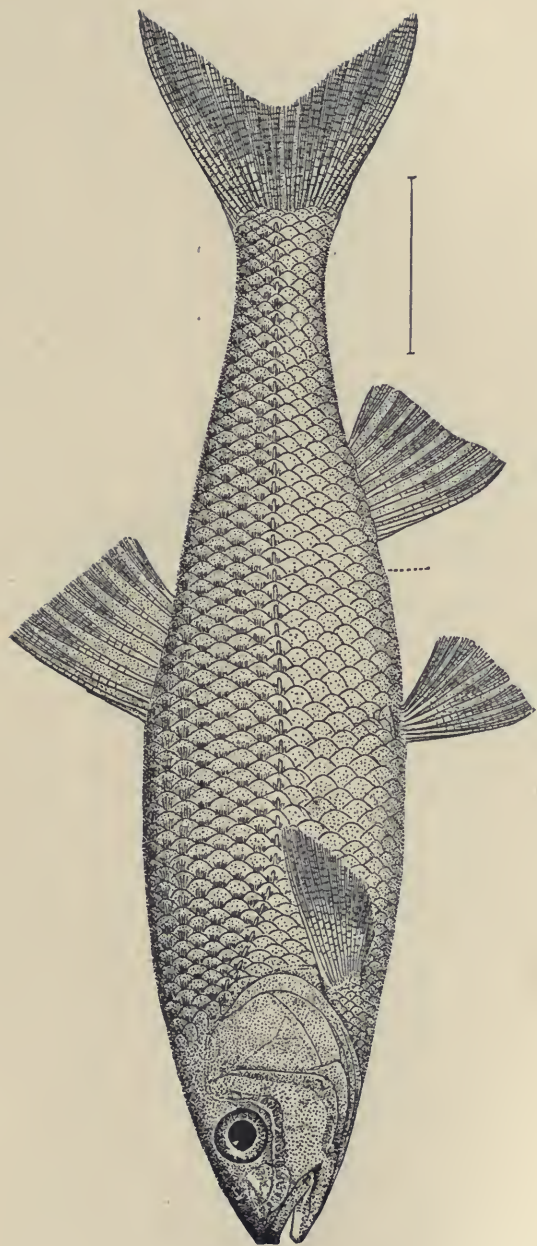
THE CARP MULLET (*Morostoma carpio*).



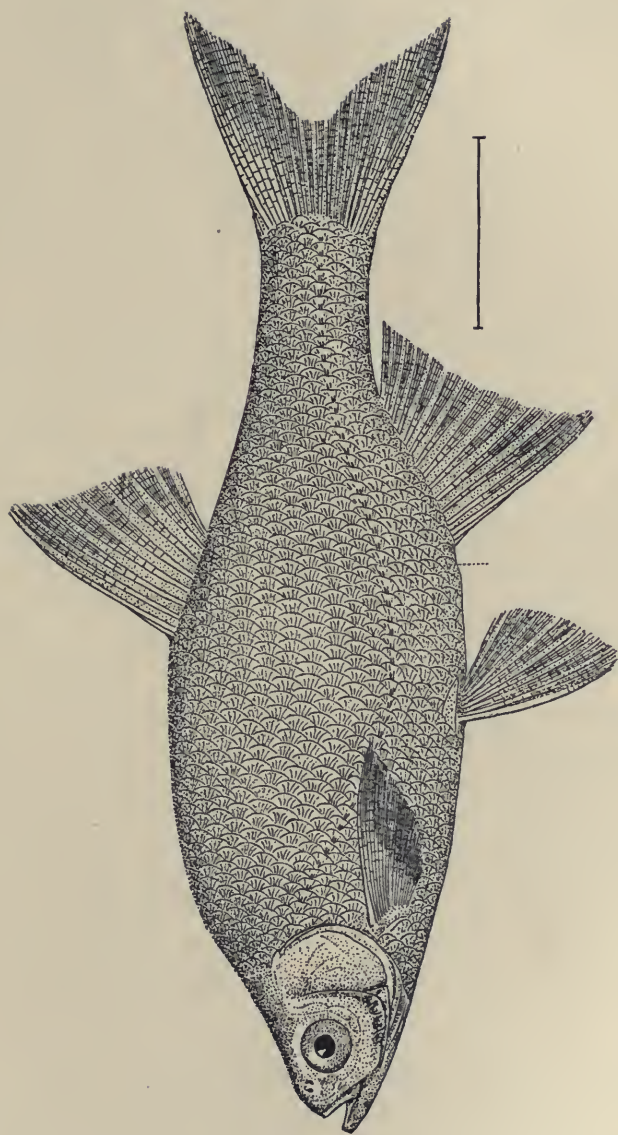


THE RED HORSE (*Morostoma macrolepidotum*).





THE FALL-FISH OR SILVER CHUB (*Semotilus bullaris*).



THE GOLDEN SHINER OR BREAM (*Notemigonus chrysolenus*).

A. natalis, a species with a broad head and a longer anal fin than the above, (A 24-27). Further information is desirable as to the geographical distribution and any differences of habit of these species.

The great Catfish of the lakes and larger rivers, (*Amiurus nigricans*) plate 5, is at once distinguishable by its great size—it may run to a weight of 100 lbs.—and its forked tail. The young may be known by the fin-formula (D, I, 5; P, I, 9; A. 25) from the above species. Apart from its only being found in large bodies of water, it appears to share the mode of life of the smaller species, but little appears to be known as to the peculiarities, which a species so distinct is sure to possess.

For completeness sake, reference may be made here to the small Stone-Cats (*Noturus*) which are inconspicuous on account of their size (4-5 inches), but differ from the Catfish proper in their habits of lurking beneath stones, and in the length of the adipose fin which is almost continuous with the tail-fin. Two species are reported from the Great Lakes region—*N. gyrinus* and *N. flavus*—the latter being characterized by its serrated pectoral spine.

The Suckers (CATOSTOMIDÆ) are a family of fish which can hardly be said to be of economical importance, for their flesh is coarse, watery and destitute of flavour, but they, like the Minnows, are at least important as furnishing food to the carnivorous fishes. Their great abundance also, especially when they ascend streams in the spring, has caused them to be occasionally used by farmers for fertilizing purposes.

They differ from the Catfishes in their coat of cycloid scales, the conical head narrowing to the small mouth, which is destitute of the surrounding barbels, but has protractile fleshy lips, and toothless jaws. There are no spines as in the Catfish, the anal fins are always shorter than in that family and there is no adipose fin. The air-bladder is divided into two or three compartments, an arrangement which has been supposed to favour sudden changes of the position of the head in swimming, but most probably has some other function.

In addition to the genus *Catostomus* which gives its name to the family, and to which the Common Sucker (*C. teres*) belongs, four other genera occur in the Lake region, viz.:—*Ictiobus*, *Erimyzon*, *Minytrema*, *Moxostoma*.

The first mentioned, including the Buffalo fishes of the Mississippi Valley and one species from the Great Lakes (*I. Thompsoni*), is at once distinguished by its long dorsal fin of 27 rays, while the others rarely have half as many; of these *Catostomus*, *Erimyzon*, *Minytrema*, agree in having the air-bladder divided into two compartments, whereas in *Moxostoma* it has three. *Catostomus* embraces comparatively small-scaled forms in which 80-100 scales are found in the course of the lateral line, while *Erimyzon*, *Moxostoma* and *Minytrema* have large scales, from 40 to 50 in the lateral line.

Of the numerous species of *Catostomus*, two, *C. catostomus*, the long-nosed Sucker, and *C. teres*, the common Sucker, are known to occur in Ontario, the former—the larger of the two—being more abundant northward and westward. It is distinguished by the projecting snout which overhangs the mouth, and by the greater number of scales (95-114) in the course of the lateral line as compared with the common species (64-70). Both species indicate their affinity to the next family (*Cyprinidae*) by the males possessing a special breeding dress in spring, consisting of a rosy lateral band, and numerous excrescences about the head and anal fin.

The Chub Suckers (*Erimyzon sucetta*), are small fish, never exceeding ten inches in length, while the Spotted Sucker (*Minytrema melanops*), which receives its name from each scale having a blackish spot at its base, attains a length of eighteen inches.

Of the large-scaled Suckers the *Redhorses* or *Mullets* are much commoner than the above. The most abundant species is *Moxostoma aureolum*, which reaches the size of two feet and upwards, and is distinguished by a yellowish brown colour and bright red fins, but there is also a silvery form (*M. anisurum*) with a longer dorsal fin (D 15-18 instead of 13).

Closely allied to the Suckers are numerous small fresh-water fish known as Chub, Dace, Shiners, Minnows, etc., belonging to the family CYPRINIDÆ, a family widely represented in the Old World as well, although the Suckers are characteristically North American.

None of them are of any economical importance, except in so far as they furnish food for the larger fishes. Much remains to be learned about the geographical distribution of the family in Ontario, it being a matter of considerable difficulty to distinguish the various species from each other. They differ from the Suckers in that the upper maxillary bone does not contribute to form the border of the mouth. The teeth on the lower pharyngeal bones furnish to naturalists the most convenient way of recognizing the species.

Of the numerous species the following may be noted: *Pimephales notatus*, the fat-head minnow; *Notropis* (*Minnilus*) *megalops*, the Red-fin or Dace, and *N. atherinoides*, the Rosy Minnow; *Hybopsis* (*Ceratichthys*) *dissimilis*, the Spotted Shiner; *Semotilus bullaris*, the Fall-fish or Chub; *Phoxinus elongatus*, the Red-Sided Shiner; *Notemigonus chrysoleucus*, the Golden Shiner, and many others.

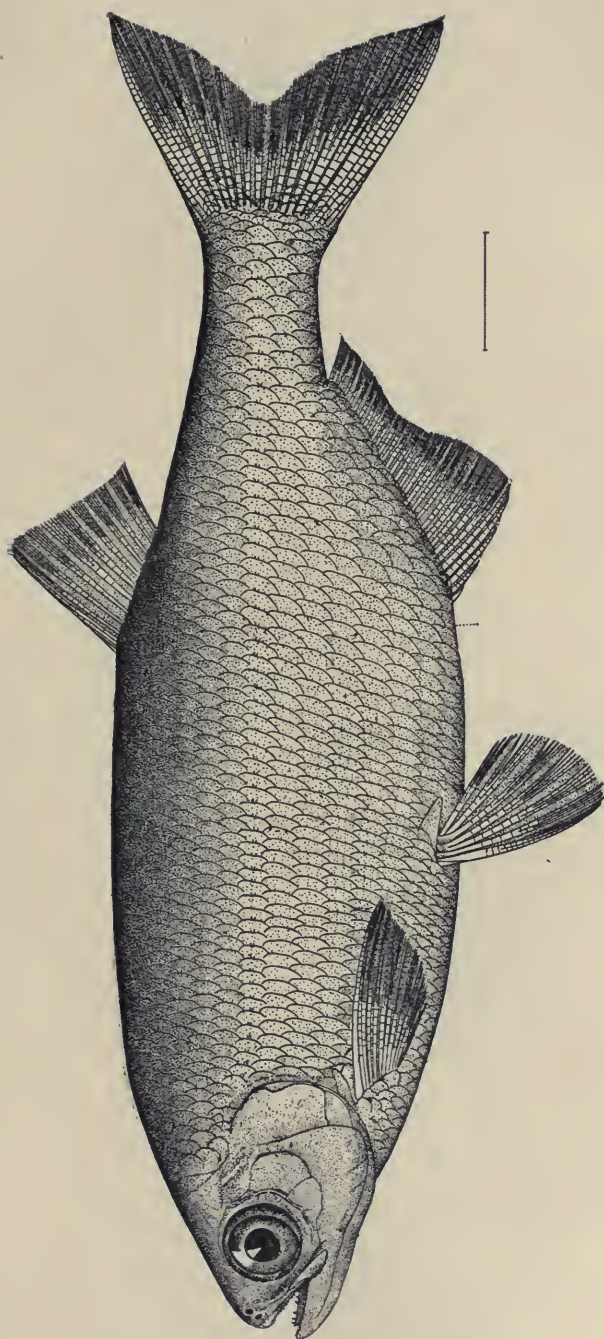
Any description of these forms, sufficient to allow of their correct diagnosis, would transgress the limits of this report. Jordan's Manual of the Vertebrates of North America gives tables facilitating the discrimination of the various species.

In addition to these small Cyprinoids familiar as a group, but less known specifically, are two introduced genera which require some notice. One of these is the gold-fish, *Carassius auratus*, a native of China, and domesticated there for centuries. It is known everywhere as an aquarium fish, and varies very much both in form and colouration. The other is the Carp proper (*Cyprinus carpio*) also an Asiatic fish but valued and cultivated both in Europe and America as a food-fish. Special reference will be made to its peculiarities hereafter, (p. 470).

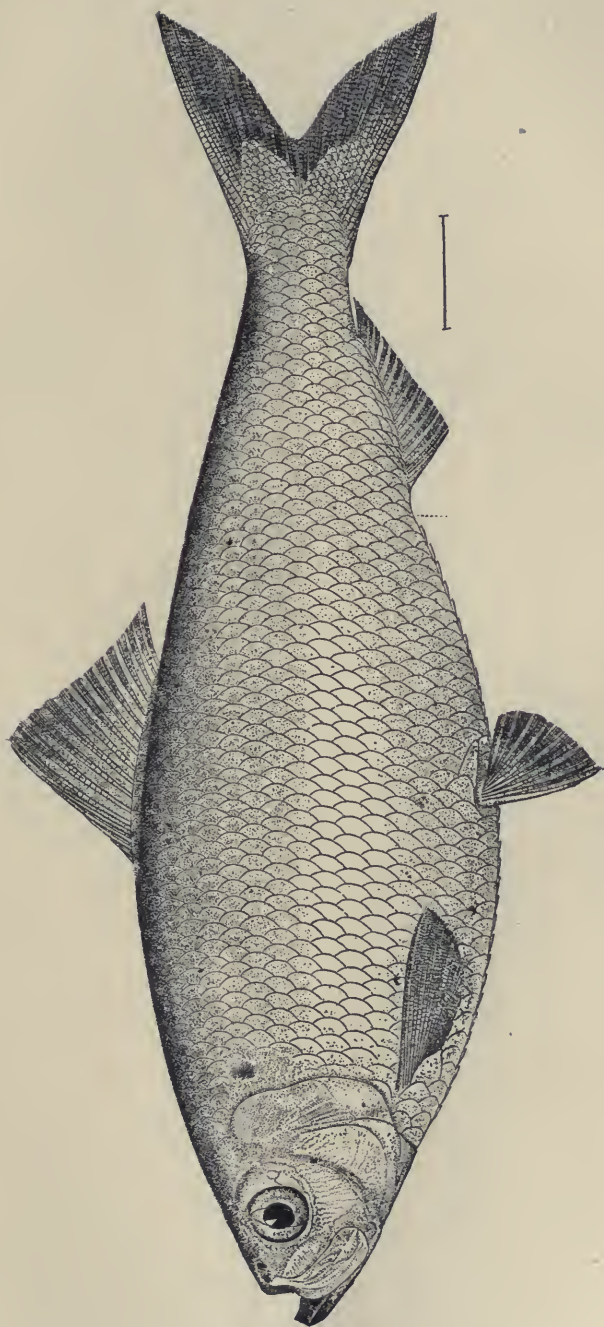
A second natural group of Physostomi is formed of the Moon-eyes, Herring and Shad, which have numerous fresh-water representatives, but are not so exclusively fresh-water in their habits as the preceding families.

In all, the body is compressed and covered with silvery scales usually cycloid and often deciduous. The premaxillaries are not protractile, and the maxillaries contribute to form the edge of the upper jaw. The anal fin is of considerable length although low, and the caudal much forked.

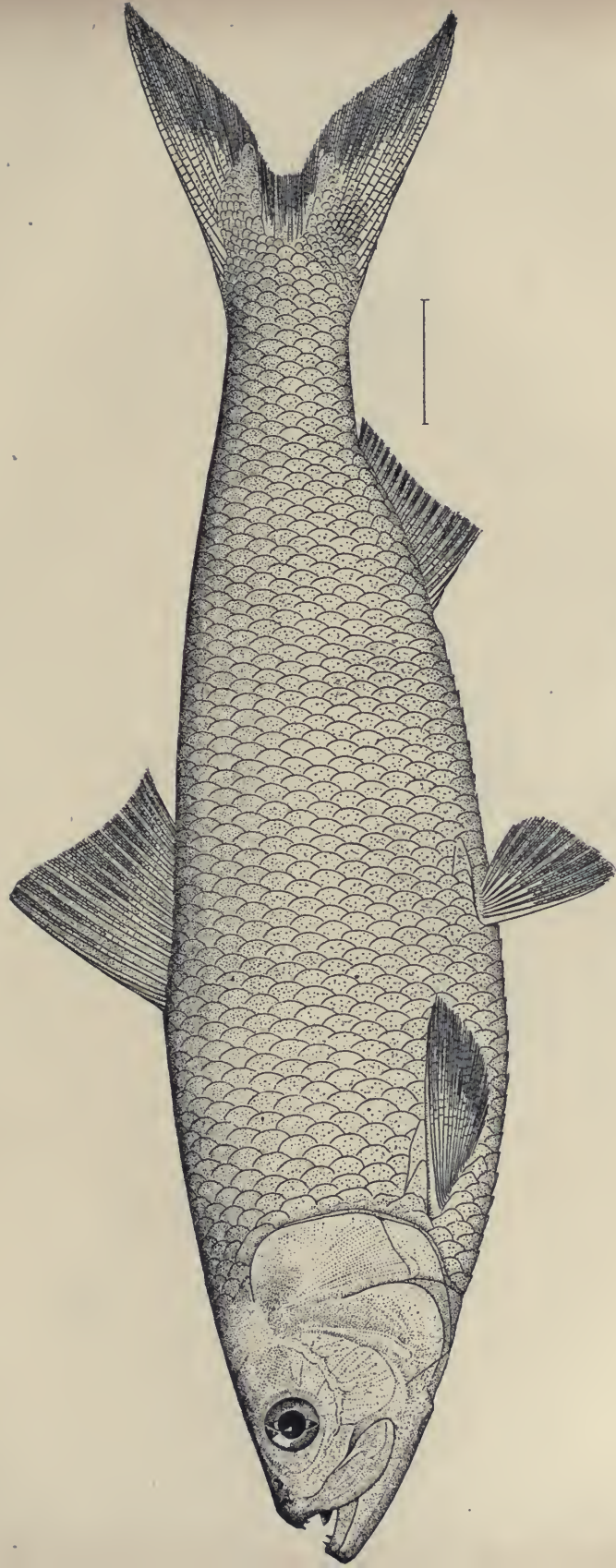
The Moon-eyes are confined to the fresh waters of North America, and belong to a single genus *Hyodon* which gives its name to the family. The popular name is derived from the very large eyes, the scientific name from the strong teeth with which the tongue is armed. One of the most obvious distinctions from the Herring family is that the teeth are crowded on every available surface of support within the mouth.



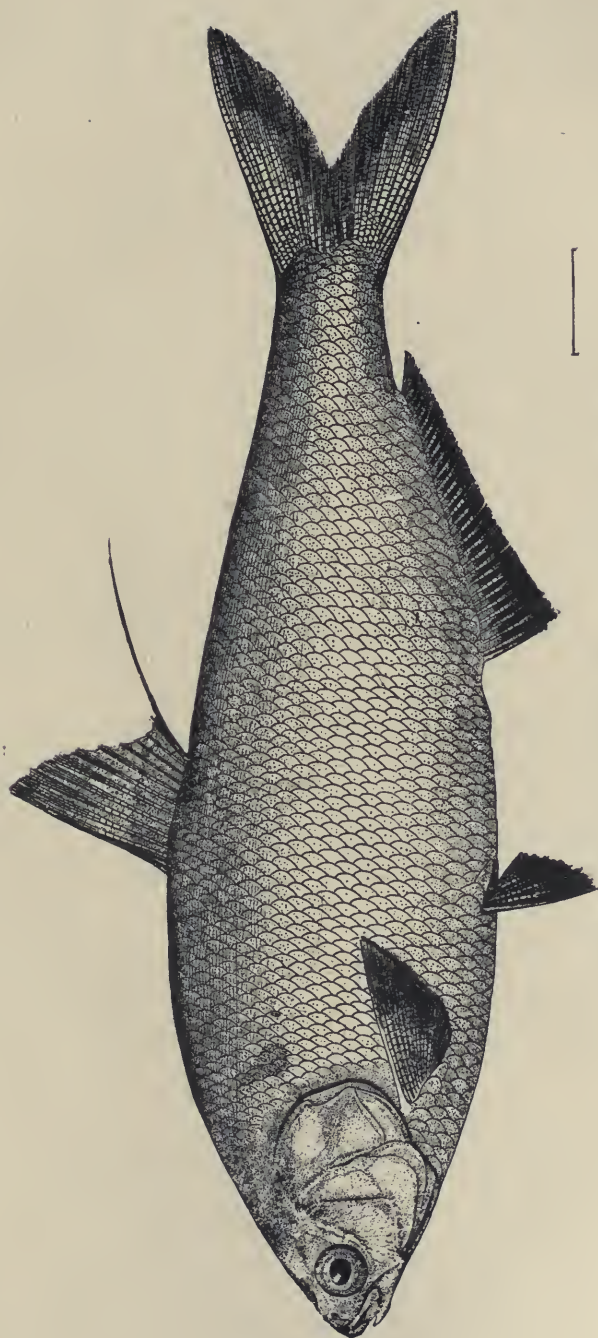
THE MOON-EYE (*Hyodon tergisus*).



THE ALEWIFE OR BRANCH HERRING (*Clupea vernalis*).



THE INLAND ALEWIFE (*Clupea chrysocloris*).



THE MUD-SHAD OR GIZZARD-SHAD (*Dorosoma cepedianum*).

The commonest species is the Moon-eye or Toothed Herring of the Lakes (*Hyodon tergisus*): it frequently is taken in pound-nets, but is not regarded as a valuable food-fish. On the other hand the Gold-Eye, *H. alosoides* (so-called on account of the belly coming to a sharp keel as in the Shad) is a fish of some importance in the North-west both commercially and to the sportsman. It is common in the Saskatchewan valley, but is probably confined to that part of Ontario which drains into Lake Winnipeg, p. 428.

The CLUPEIDÆ or Herring family differ from the Moon-eyes in having an almost toothless mouth, but very long gill-rakers; they are all gregarious fish swimming in immense schools, but although many are marine, others, like the salmon, ascend fresh-water streams to spawn, and of these some may become permanently land-locked.

The sea-herring (*Clupea harengus*) is of course one of the most valuable and abundant of food-fish, but it is entirely confined to the sea; the Shad on the other hand (*C. sapidissima*) ascends rivers to spawn and was formerly abundant even in the Lower Ottawa. The only member of the genus, however, which can now be said to be common within the Province is the Gaspereau or Alewife (*C. pseudoharengus* or *vernalis*), introduced into Lake Ontario since 1873 and now very abundant. Another species, the Ohio Shad (*C. chrysochloris*), has been introduced into Lake Erie, but is not valued for food.

One of the marked features of the herrings is the keeled abdomen with its saw-like edge. Teeth may be present on the vomer as in the sea-herring, or on the jaws as in the Shad, or may be absent in the adult as in the Alewife and Shad proper. The latter species is distinguished by the gill-cover being deeper than it is long, also by its finer and more numerous gill-rakers.

The Gaspereau appears to have been accidentally introduced into Lake Ontario when the intention was to plant shad. At least it was formerly very uncommon in the lower St. Lawrence, rarely straggling up higher than Metis. It is still uncertain whether the fish, which appear abundantly every spring toward the end of April, and disappear just as suddenly in September or October, go down to the ocean in the fall and return thence in the spring or whether they merely retire to the deep waters of the lake. The time of their movement is very probably a matter of temperature. They come in towards the shores in immense schools at the spawning season, rising to the surface and rippling it as mackerel do. The schools are composed of adult fish of 8 to 9½ inches in length, and are regarded as a nuisance in the Thousand Island region where they fill the pound and trap nets to the exclusion of other fish. They are, however, valuable from their quantity if not for their quality, and besides furnishing a cheap food the surplus catch can be employed in the manufacture of fertilisers.

Obstacles in the way of river dams, etc., preventing the Alewives reaching their natural spawning grounds and thus diminishing their number, have been regarded by the late Professor Baird as a cause of the decrease of the inshore cod and other fisheries, the Alewives being a favourite food of the carnivorous fish. It is probable that the presence of Alewives in Lake Ontario may re-act favourably on its fisheries by furnishing an abundant food for the larger lake fish. Little is known with regard to the spawning of the Alewife in Lake Ontario: it is said to occur in shoal water in June. The eggs number from 60,000 to 100,000, and are somewhat adhesive; three or four days suffice to hatch them, and the young fish obtain a length of two or three inches before the winter. Immense numbers of dead Alewives are found on the surface of the lake in the early summer; the cause of

their death is obscure, it being hardly possible that the explanation offered as to some of the smaller lakes of New York State—the use of explosives for wholesale killing of food-fish—is the true one.

The shad (*C. sapidissima*) is undoubtedly one of the most important of American food fishes. It used to be abundant in the Lower Ottawa, but the pollution of the river, by sawdust etc., appears to have rendered its former spawning grounds unavailable. Its spawning habits resemble those of the Alewife; the eggs are spun out by the female on to a sandy bar while in rapid motion, and the male scatters the milt at the same time, both sinking slowly to the bottom. Three to eight days suffice for hatching, after which the young escape and are able to swim freely. A ripe shad contains from twenty to forty thousand eggs. The males are smaller ($1\frac{1}{2}$ -6 lb.) than the females ($3\frac{1}{2}$ -8) and are earlier mature. The same apparent local instinct is said to be exhibited by the shad as by the salmon; the young hatched in any particular stream returning to it after an interval of two to three years when adult. It is possible that this is to be interpreted by their not going far from the mouths of the rivers in which they have been bred.

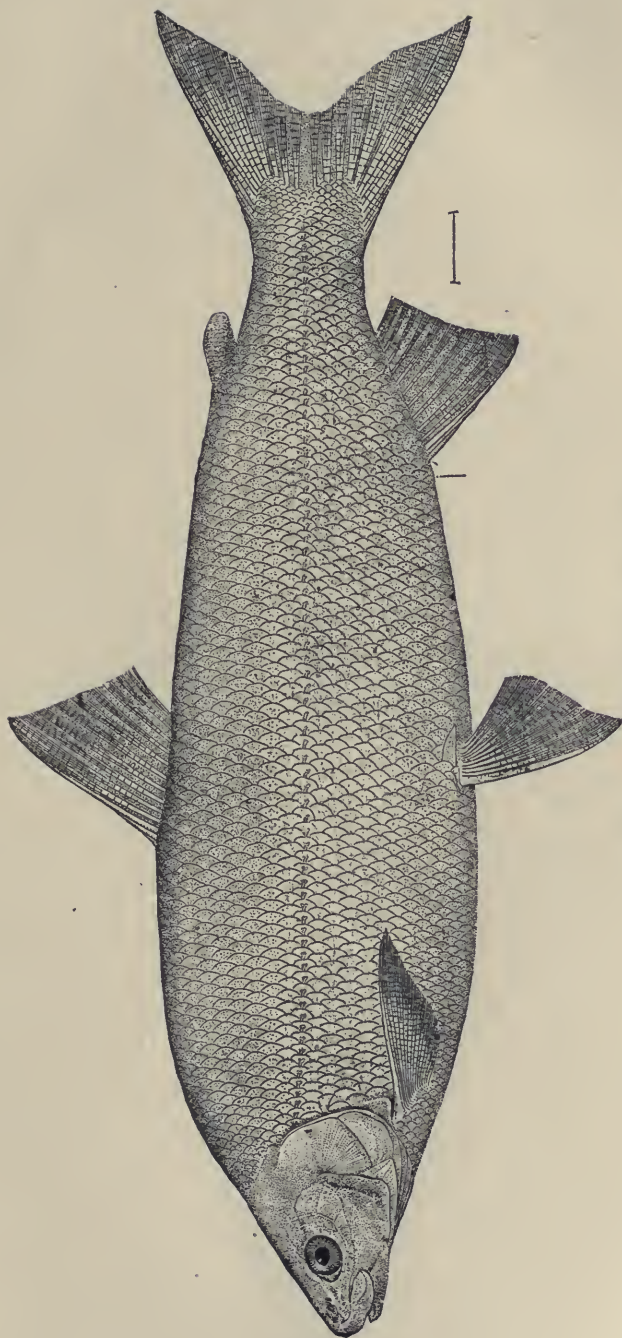
Allied to the shad is a fish of similar form recently introduced into Lake Ontario and Erie, but of no value economically. It is known as the Gizzard-shad (*Dorosoma cepedianum*) on account of its muscular stomach and is further distinguished by the last ray of the dorsal being produced into a long thread. It has occasionally been found dead at the surface in considerable numbers.

By far the most important family of the fresh-water Teleosts, as regards economical value and the number of species, is undoubtedly that of the SALMONIDÆ. Like the foregoing, many of the members are anadromous, living a part of their life in the sea but ascending rivers to spawn. Other forms which are confined to large bodies of fresh water often congregate about the mouths of the rivers falling into them or ascend these for the same purpose. The Capelin (*Mallotus villosus*) and Smelt (*Osmerus eperlanus*) are exclusively marine forms; the Salmon and Trout are found in both salt and fresh water, while the Whitefish, Grayling and Lake Trout are confined to inland waters.

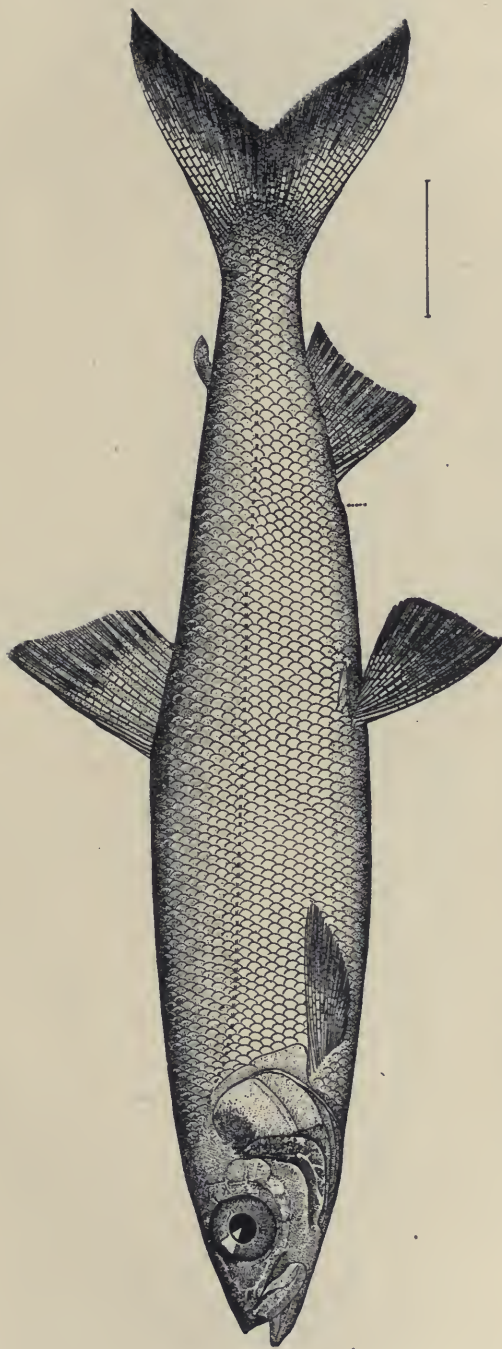
In all of the forms that concern us here, the intestine is furnished with numerous pyloric cœca, which serve to increase its surface. Unlike the shad the abdomen is rounded, and there is present an adipose fin. The Whitefish (*Coregonus*) are distinguished by an entire absence of teeth, and by the large size of the scales. Of the toothed genera, the Grayling (*Thymallus*) is at once characterized by its long and high dorsal fin, while the Salmon (*Salmo*) and Brook and Lake Trout (*Salvelinus*) agree in having teeth on the jaws and tongue, but differ in that the vomer in the latter genus is destitute of teeth.

The genus *Coregonus* is not confined to North America but is also found in large inland waters—such for example as the Swiss Lakes—in Europe and Asia. The species are somewhat difficult to distinguish, innumerable local varieties being recognized by fishermen, which probably do not deserve to rank as distinct species. The body is compressed in all and the air-bladder very large, the pyloric cœca very numerous, and the eggs numerous and of small size.

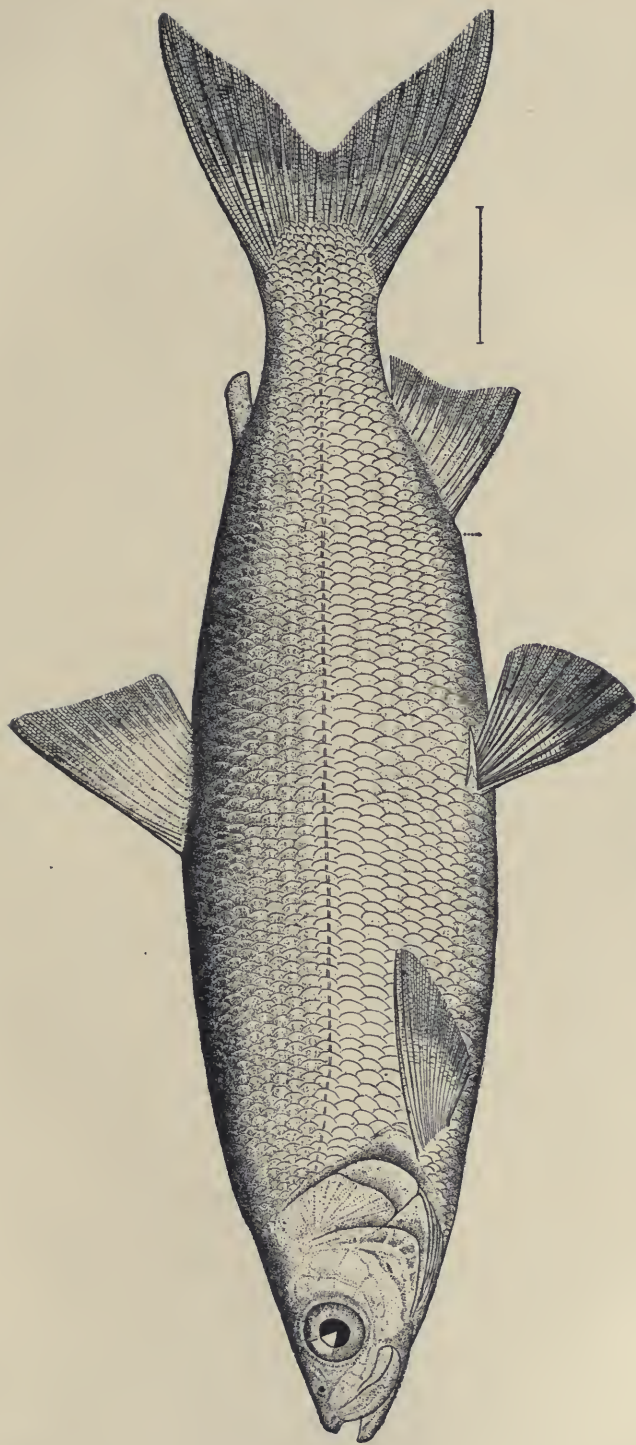
Six species occur within the Province, which may be arranged in two groups according as the lower jaw is included within or projects beyond the upper. To the former belongs the common Whitefish (*C. clupeiformis*), and with it *C. quadrilateralis*, *C. labradoricus* and *C. hoyi*, while to the latter belong the Lake Herring (*C. artedii*) and the Tullibee of Manitoba, (*C. tullibee*).



THE WHITEFISH (*Coregonus clupeiformis*).



THE DEEPWATER CISCO of Lake Michigan, "LONGJAW" of Lake Ontario (*Coregonus hoyi*).



THE LAKE HERRING OR CISCO (*Coregonus artedii*).

The common Whitefish is the most important, abundant and widely distributed of these. It is distinguished by its compressed body, its elevated back—a peculiarity especially marked in the adult—and its small short head with obliquely truncated snout.

C. quadrilateralis is rounder in body, (it is the Roundfish of Richardson) and further differs in having a larger head, stouter gill-rakers and a dark-blue colour of the back from the foregoing species, to the size of which it does not reach. It is commoner northward than in the Great Lakes.

C. labradoricus is commoner towards the north-east, as its name suggests, but it is also found in Lake Superior and northward; it has the compressed body of the common whitefish, but the length of head of the Roundfish. It only attains a length of one foot, and has some teeth on the tongue which the whitefish lacks. A whitefish of similar size occurring in the deeper waters of Lakes Michigan and Ontario is known as the Cisco in the former and as the "long-jaw" in the latter; it is distinguished by the bright silvery color of the under parts, but also by the smaller number of fin-rays (D 10, A 10.) and of the scales in a vertical row. In its larger mouth it approaches the Lake Herring (*C. artedi*), which occurs in immense shoals in the lakes and especially in Lakes Erie and Ontario, and is, next to the Whitefish, the most important member of the group. The variety known in commerce as the Cisco of Lake Ontario, is a deep water form, much fatter than the ordinary Lake Herring, and bringing as much as one-third higher price on account of its making better kippers than the other. Lastly the Tullibee, which is commoner in Manitoba than in Ontario, is intermediate to a certain extent between the Lake Herring and Whitefish, but has the deep compressed body of the latter and scales which, being larger in front and peculiarly marked, are characteristic of this species alone.

The Whitefish proper deserves special attention on account of its importance from the economical standpoint. As remarked above it exhibits considerable variation both in size and form. The largest fish are taken in Lake Superior, where they may weigh as much as 20 lb, whereas in Lake Erie they rarely attain to half that weight. The fish are mature when much smaller, the males being conspicuously smaller than the females.

The observed variations in form are associated with a marked preference for adhering to some particular locality even in large bodies of water. This would seem to be incompatible with the migrations of the fish in the lakes, but it is probable that these movements are from deep into shallow water and *vice versa*. Fishermen at least are confident that Whitefish taken in different localities can be easily recognized, that those *e.g.* taken in the upper end of Lake Ontario are different from those in the lower end of Lake Erie; and that the fish *e.g.* taken in Batchewaung Bay, Lake Superior, are peculiar to that bay. Indians at the Sault say that the Whitefish of the lake above never descend the rapids, while those of the river never ascend to the lake.

In Lake Ontario and also in the upper lakes, but not in Lake Erie, where the water is too warm, two shoreward movements are observed; the first occurs in June with the approach of warm weather and its object would appear to be the larvæ of the various aquatic insects which are then abundant. When the shallow water becomes too warm they retreat again into the deeper waters of the lake, where the shrimp-like crustacea of these depths (*Mysis relicta* and *Pontoporeia affinis*) furnish them with abundant food. After a stay of two or three months, that is to say till about the middle of October, there begins the second shoreward movement, this time for the purpose of spawning, the spawning grounds being slowly reached towards the middle of November or the beginning of December. After this function has been successfully accomplished they retreat again into

the deep waters of the lakes. In the fall, and just before the spawning season, various minute shell-fish would appear to constitute the bulk of their food.

The places selected for spawning grounds are honey-combed rocks or gravelly bottoms, in water of 30 to 50 feet depth, the crevices in which afford a safe place of lodgment for the eggs and protect them to a certain extent from the watchful spawn-eaters, the suckers, lake herring and lake lizards or Meno-

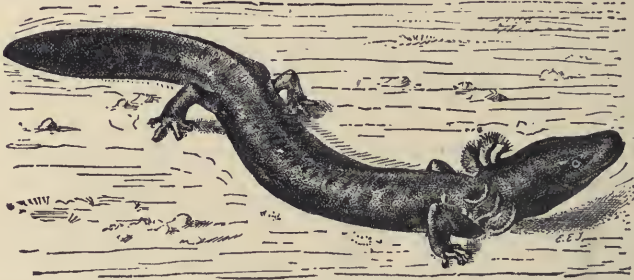


Fig. 12.—CANADIAN LAKE LIZARD, OR MENOBANCH. (*Necturus maculatus*.)

branches (fig. 12). On the north shore of Lake Superior the mouths of the great rivers, like the Michipicoten and Neepigon, are favourite places; possibly a relic of a former anadromous habit, such as characterises other Salmonoids. To cope successfully with the destructive spawn-eaters large numbers of eggs are deposited, although many of them are destined to destruction. It has been calculated that a female Whitefish sheds 10,000 for every pound of her weight.

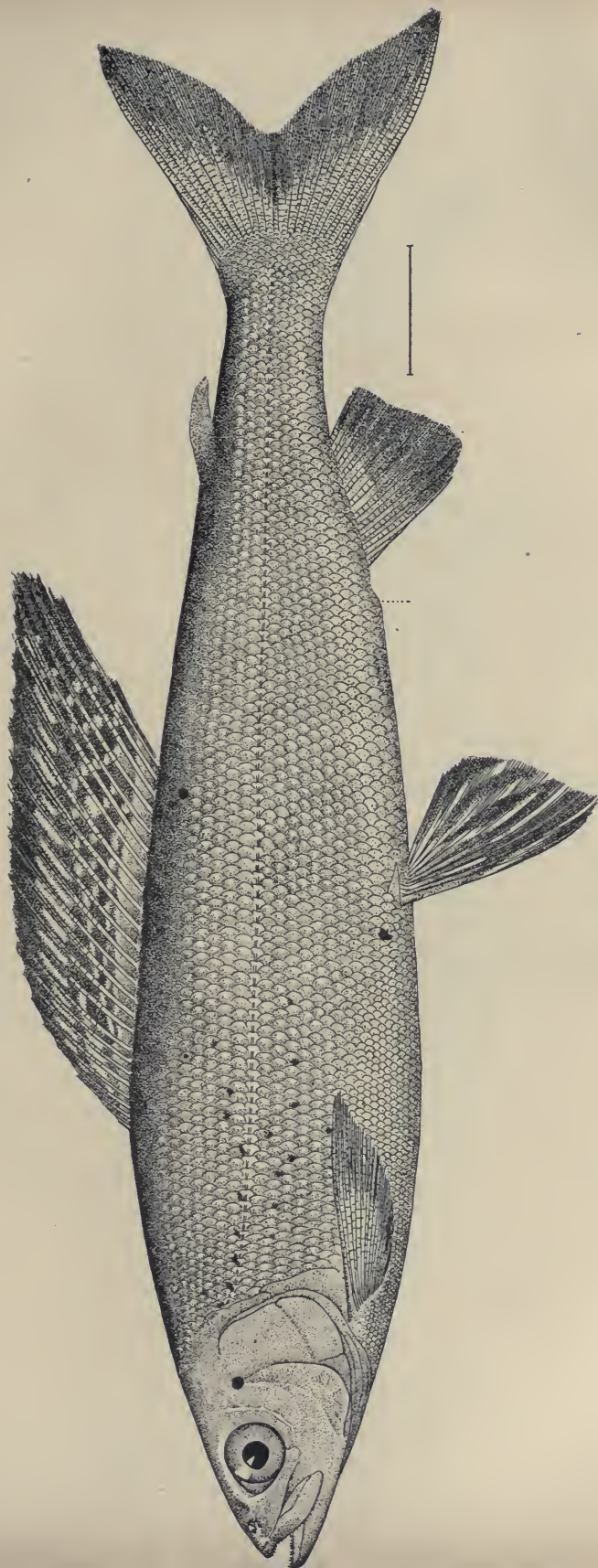
It is possible that the spawning habits in the rivers and lakes differ, the fish exhibiting greater activity in the former than in the latter. In both, however, they pair, the male being uniformly much smaller than the female. In the Detroit River the fish are described as jumping in pairs at night, the male swimming along beside the female with his snout up towards the pectoral fin, and both suddenly leaping from the water, spawn and milt running from them the while. In Lake Ontario, on the other hand, the female has been described as ploughing a nest in the gravelly bottom, where she remains for two or three days until all the eggs are deposited. Possibly the spawning habits of the various species differ, but sufficient attention has not been given to the subject.

In contrast with the short period of development described for the Clupeoids (p 445) the Whitefish eggs require about 100 days to hatch out at the natural temperature of the water. They thus escape from the egg about the beginning of April, and have entirely absorbed the yolk-sac by the end of that month, when they have reached the length of half an inch.

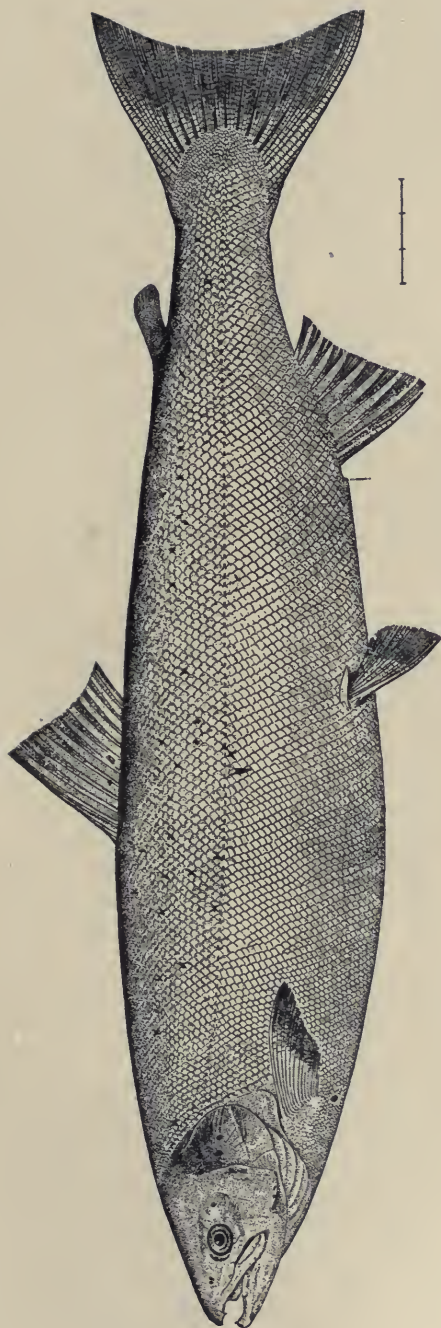
The little minnows thereafter make for deeper water, but it is stated that the fish do not seek the greater depths until they have attained a weight of over a pound; many of these immature fish are therefore caught in pound-nets, while the gill-nets secure no fish under a pound in weight.

The principal enemy of the Whitefish after it has attained maturity is the Lake Trout, but the small fry are undoubtedly eagerly eaten by the Bass and Percoid fishes, as long as they remain within their reach.

Occasionally Whitefish have been observed to die in large numbers. Prof. A. C. Lawson brought me specimens of a parasitic crustacean (*Argulus coregoni*?) some years ago which was obviously the cause of death of immense numbers of whitefish in the Lake of the Woods, and a similar phenomenon is recorded from lakes in Minnesota. Whether this is a frequent cause of such epidemics remains still to be investigated.



THE GRAYLING (*Thymallus tricolor*).



THE ATLANTIC SALMON (*Salmo salar*).

A passing notice is due to a beautiful and brilliantly coloured fish, the American grayling (*Thymallus signifer*), which is found in streams in the southern peninsula of Michigan and in cold clear streams in suitable places north-westerly from that towards the Arctic ocean. It is possible that this species (which, it has been suggested, is a relic of the glacial period) may yet be found in the north-westerly part of the Province. It attains a length of 12-18 inches, and is marked by its long and high dorsal fin. Unlike the other Salmonoids it spawns in April.

Our remaining Salmonoids are referable either to the genus *Salmo*, including the Atlantic Salmon (*Salmo salar*), and its landlocked variety the Winninich, and the genus *Salvelinus*, including the various varieties of Lake Trout (*S. namaycush*) and of Brook Trout (*S. fontinalis*).

The extreme variability of this tribe has always offered great difficulties to the ichthyologist and is attributable to differences of age, sex, breeding habits, and the surroundings of the fish generally. The young, for example, of the Atlantic Salmon are barred, the immature males silvery, while the breeding dress of the male is brilliant and the shape of the jaw different at that time. Again, Brook Trout in rapid streams are brilliantly coloured, in dark lakes, uniformly sombre, while sea-run individuals (Sea-Trout) have a bright silvery coat without any of the ocellated spots generally so characteristic. Similarly, the same species which never attains a pound weight in a small stream may through abundance of food in a large body of water reach a weight of five pounds and upwards. Thus innumerable species have been made out of these local and other variations, which, however, may all be relegated to the three species named above.

Apart from the vomerine teeth which mark out the Salmon proper from the Charrs, the Atlantic Salmon (*Salmo salar*) presents many differences from the Lake Salmon Trout. Among these may be noted the larger scales (there are only 120 to the lateral line instead of 180 to 200), and the black in place of the gray spots.

The Sea Salmon can hardly be said now-a-days to be an Ontario fish. Mr. Samuel Wilnot, of the Dominion Fishery Service, has recorded its disappearance within the last fifteen years from Lake Ontario, the streams and creeks flowing into which used to be crowded at spawning time with salmon. The disappearance is unquestionably due to the drying-up of these streams consequent on the altered conditions of the land drained by them, to obstacles like mill-dams preventing the ascent of the fish toward the head-waters, and to the pollution of the streams by sawdust and other refuse.

It is probable that these salmon visited the sea like the salmon of the Gulf, but it has been suggested, in view of the existence of the land-locked variety in the lakes of Quebec (the Winninich), and of Maine (the Sebago Salmon), that possibly they only retired to the deep waters of the lake.

The Sea-Salmon feeds largely on herring, but fasts for the most part during its fresh-water run. This begins for the earliest arrivals two months before the spawning time (the middle of October for the Gulf Salmon). The fish pair, and both parents assist in ploughing out a series of nests in the gravel of the river-bottom into which the spawn and milt are deposited, and soon covered up by the sand swept down from the nest ploughed out next above.

The eggs of the salmon are of large size, a quarter of an inch in diameter, and a 40 lb. fish produces about 15,000 of these. After impregnation they mature in 100 to 140 days in the Scotch rivers, but here the hatching is postponed by the colder water till May.

When hatched the young Salmon is three-quarters of an inch in length, and still shows its yolk-sac for four to six weeks. After this is absorbed the fry begin

to feed, and measure an inch and a half in two months, when they begin to show the spots and bars of the "Parr." This stage persists till the second or third spring, when the Parr has become seven to eight inches in length, and then it makes its way towards the sea as a "Smolt," exchanging its bright colours for the uniform silvery coat of the new stage. The length of time which the smolt lives in the sea varies from four to twenty-eight months; it returns to its native river as a "Grilse," and in the case of the male has by this time attained sexual maturity. The grilse phase is marked by a slenderer body, smaller head, more forked tail, and bluish spots, while the weight may vary from two to six pounds.

The land-locked Salmon above referred to—the Winninich or Ouananiche of the Indian—so abundant in Lake St. John, probably also occurs in suitable places in Ontario. Hallock in the *Sportsman's Gazetteer* speaks of the so-called Salmon Trout of the Stony Lake region as land-locked salmon and as identical with those of Lake St. John. Mr. H. T. Strickland, writing through Mr. Justice Falconbridge, observes that these fish were first recognized as land-locked Salmon by Seth Green. They live in the deeper parts of the lakes only coming into shallow water at the end of October or the beginning of November to their spawning beds. They frequent swift currents when the ice breaks up in spring and may then be taken by rod and line with live bait. It is possible that in certain instances these larger trout from the inland lakes may be varieties of the next species.

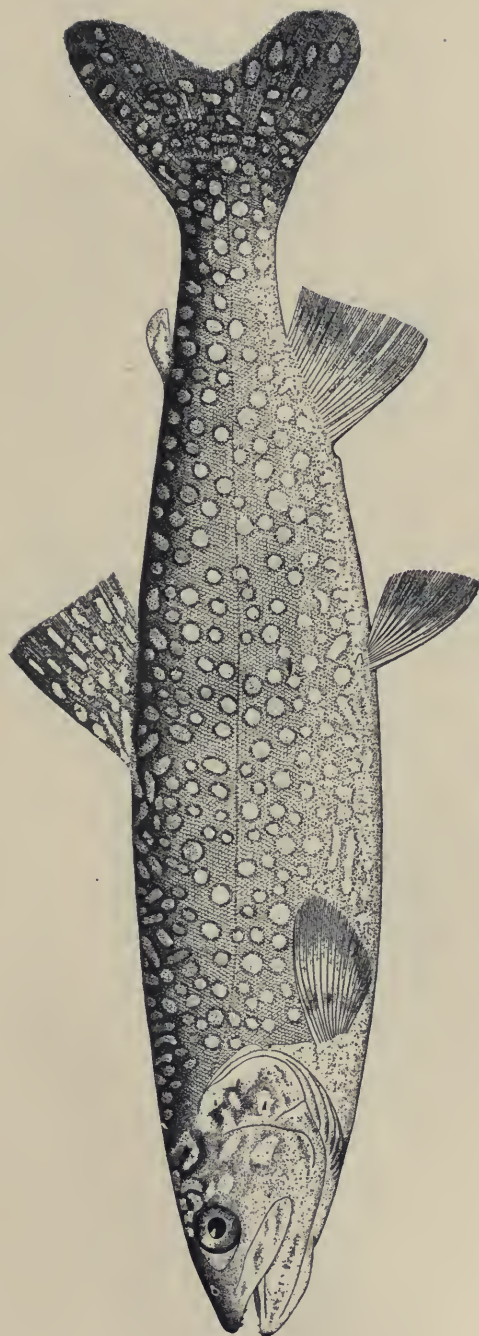
The Lake Trout or Lake Salmon Trout and the Brook Trout both belong to the genus *Salvelinus*, but the larger species (*S. namaycush*) has a distinct toothed crest on the vomer. Its colouration is for the most part dark grey, with paler grey spots, the dorsal and caudal fins being reticulated with darker markings. There is considerable colour variation recognized by the fishermen: thus the *Trites de Grève* are those dull coloured ones from muddy bottoms; the *Trites des Battures* are prettily mottled ones from rocky shores, while the *Trites du Large* are silvery-coated individuals from deep water.

The *Namaycush* (its Indian name) attains a length of over three feet and a weight of 20 to 30 lbs. and upwards, which it undoubtedly owes to the succulent whitefish and herring on which it preys. It is by no means confined to the chain of great lakes, but is found in all large bodies of fresh water. A variety from the deeper waters of Lake Superior, the *Siscowet*, is said to be a very superior food fish, at least in its salted condition, to the *Namaycush* and differs from it in its smaller size ($4\frac{1}{2}$ to 5 lbs.), its less frequency, more silvery colouring, as well as in its shorter and broader head, the eyes being near the end of the nose and further apart than in the *Namaycush*. The flesh is extremely fat, to which circumstance its Indian name is due.

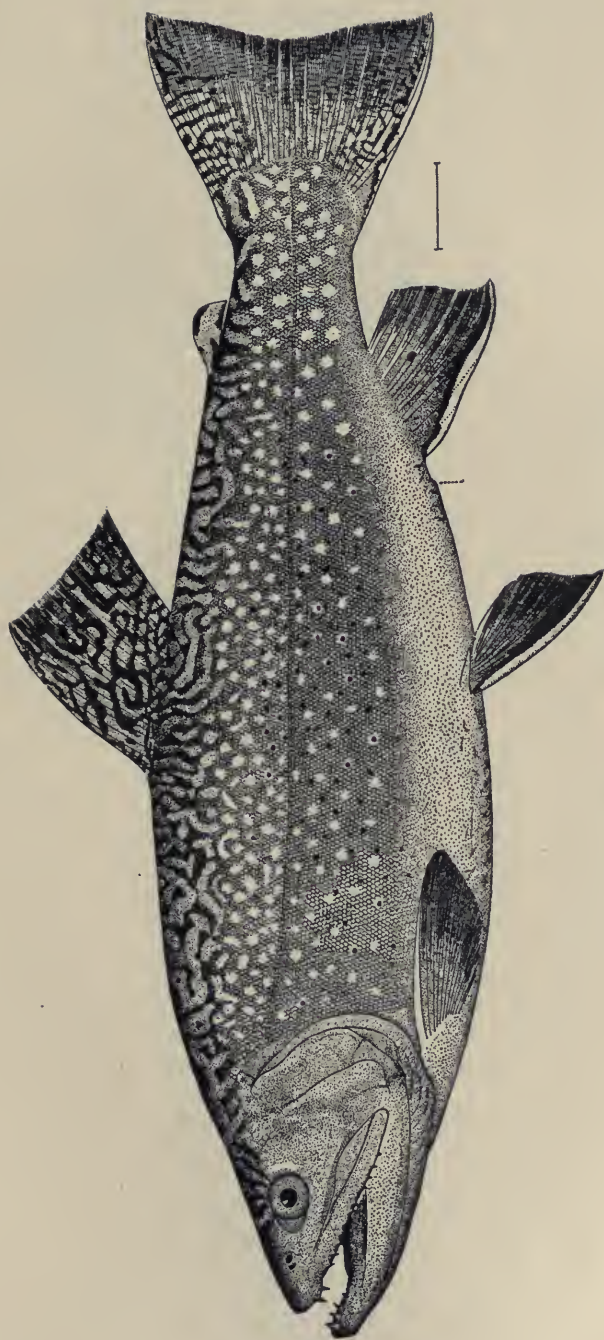
The Lake Trout spawn late in October, before the Whitefish, coming into comparatively shallow water, and depositing their large eggs in the crevices of rocky reefs, where they remain till hatched early in spring.

The average weight of the fish taken in the gill nets is 5 to 15 lbs., but individuals may attain dimensions second only to those of the Sturgeon. A 20 lb. trout has been found with 13 herrings in its stomach, an indication of the voracity to which they owe their rapid growth.

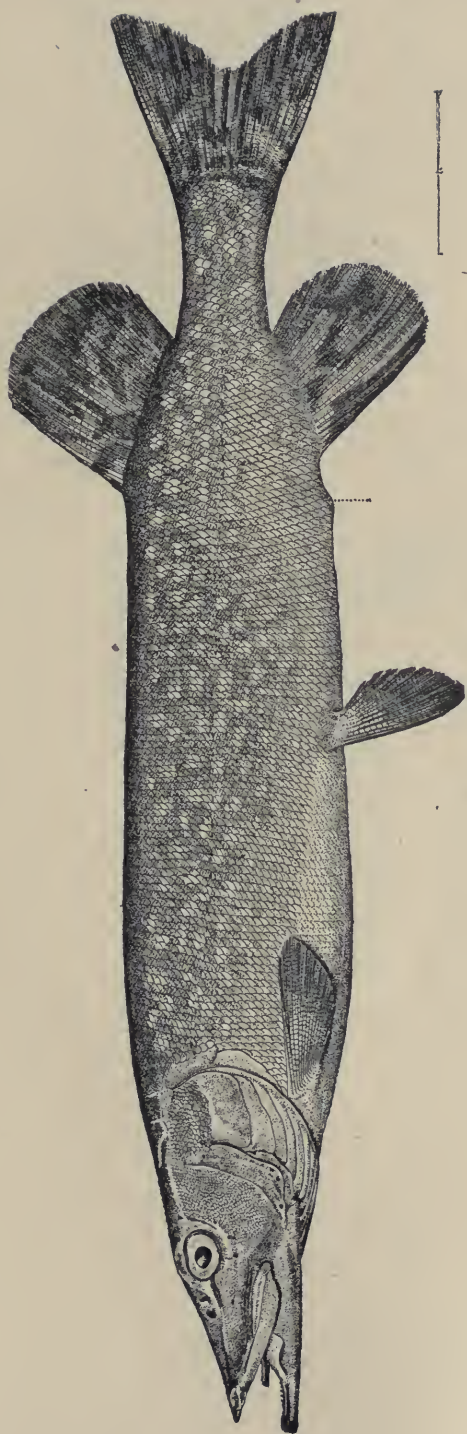
Accessibility to an abundant supply of food appears to have a similar effect on the size of the Brook Trout (*S. fontinalis*), for in the Neepigon, fish up to seventeen pounds in weight have been secured, and sea-run individuals (Sea-Trout) frequently weigh 6 and 8 lbs. Generally speaking, however, in small streams and ponds the trout rarely attain more than a pound in weight.



LAKE TROUT, OR LAKE SALMON TROUT (*Salvelinus namaycush*).



THE BROOK OR SPECKLED TROUT (*Salvelinus fontinalis*).



THE PIKE (*Esox lucius*).



THE MASKINONGE (*Esox nubilior*).

Variation in colour and form as well as size is to be observed. From rapid streams the trout are lithe and long-finned, from quiet lakes rounder and short-finned, while from cool brooks the most vividly coloured individuals are obtained, and from dark pools those with sombre hues.

The food of the brook trout is chiefly formed of insects and insect larvæ (mosquito and black-fly larvæ among the number) it is therefore not surprising that, with the cultivation of the country and the consequent reduction of breeding places for flies, the trout should have become scarcer as well as the food.

Like the salmon, the Brook Trout seeks gravelly bottoms in streams to deposit the spawn in the fall of the year, the season lasting from three to six months. The female excavates a nest in the gravel, fans out the sand by means of the anal fin, the male keeping watch while this operation is in progress. The eggs are three-sixteenths of an inch in diameter, varying, however, considerably in size and in number with the weight of the fish. A one pound trout has furnished 1,800, but the numbers are not proportionately large for the bigger fish on account of the larger size of the eggs in these.

The amount of time which the eggs take to hatch is a question of temperature. Fifty days in water of 50°F. is an experiment of the hatching house, but this may be diminished to thirty-two days in water of 54°, and prolonged to one hundred and sixty-five days in water of 37°. The last condition is that which obtains in nature. The yolk-sac is absorbed in another month or two after hatching, when the independent life of the young trout begins.

The only remaining physostomous fishes of economical importance are the members of the pike family (the ESOCIDÆ.) In passing to them, however, reference may be made to certain inconspicuous forms which properly belong here. The first is the trout-perch (*Percopsis guttatus*), a little fish of six inches in length combining the characters of the fish named. It has a small adipose fin, ten pyloric cœca, and its mouth is more like that of a perch than of a salmonoid. It spawns in spring.

A second group is formed by various minnow-like fish such as the spring minnow, *Fundulus diaphanus*, a member of the family Cyprinodontidæ, resembling the minnows in their protractile jaws, but differing from them in their being for the most part brackish water fish, and of ovoviviparous habit. The mud-minnows, (*Umbra limi*) which are everywhere abundant in ditches, resemble the foregoing in their habits, but are more like miniature pike in structure.

The members of the pike family (Esocidæ) are characterized by an elongated body with prolonged and depressed snout. The mouth is adapted by its wide gape and its formidable armature of teeth to the voracious habits of the fish. The dorsal fin is far back over the anal in all, and there is no adipose fin. All belong to the genus *Esox*, which includes some lesser pike confined to the States (there called pickerel), and the two species that are common in Ontario, *E. lucius*, the common pike—Indian Kenosha (French rendering Kinongé)—and *E. nobilior*, the great pike or maskinongé.

These species may be distinguished from each other by the circumstance that in the pike, *E. lucius*, the cheeks are scaly, the gill-covers bare, while in the maskinongé the lower halves of the cheeks as well as the gill-covers are destitute of scales. The branchiostegal rays also are 14 to 16 in the pike, 17 to 19 in the maskinongé, while the colouration of the former species is light spotted on a dark ground, of the latter, dark spotted on a light ground.

The pike proper is common to both sides of the Atlantic; the maskinongé is confined to the basin of the St. Lawrence. Both species spawn in spring, the

eggs are small and very numerous, as many as 100,000, and are deposited in shallow places or overflowed tracts. The hatching process lasts fourteen days. Of the two fish, the maskinongé is the more valuable and is especially common in the smaller lakes such as Lake Simcoe, Rice Lake, Scugog, etc. Further details are desirable with regard to the comparative distribution of the two species in the Province and of their spawning habits.

The only other family of physostomous fishes represented in the Province is that of the eels (*ANGUILLIDÆ*), distinguished by their elongate snake-like body covered with obscure concealed scales, and possessing well-developed pectoral fins, but no ventrals, while the dorsal and anal are confluent round the tail.

There is only one species, *Anguilla rostrata*, which is common in all rivers of the continent discharging into the Atlantic, but appears to be absent from our Hudson's Bay system. It has been asserted that its introduction into the lakes above Lake Ontario is comparatively recent.

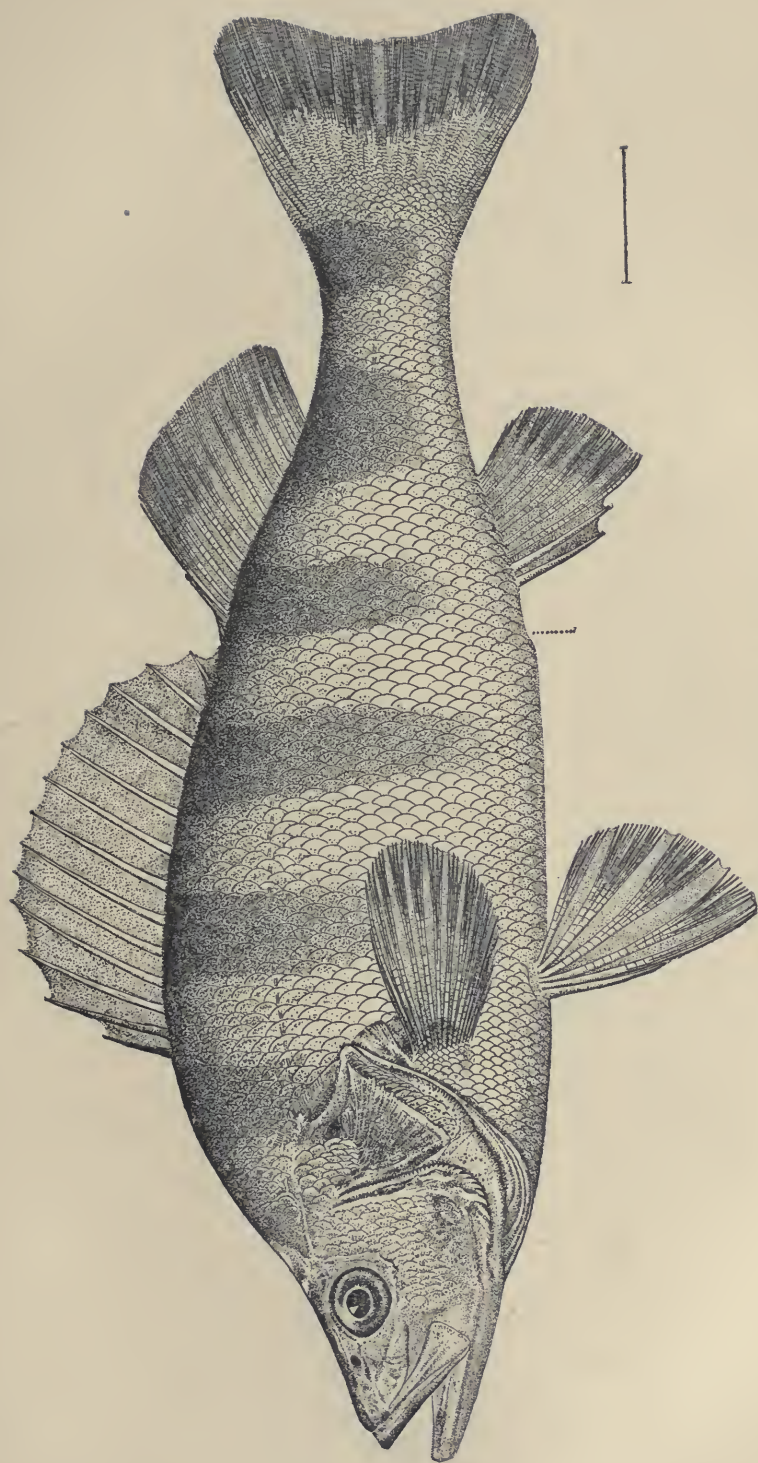
In Europe eels are believed to spawn only in the sea and to die thereafter. The males are small in size (15-16 inches in length) and do not leave the sea for any distance, so that only immature females take part in the spring upward migration and are found high up in the rivers where they remain till they are mature; they then descend to the sea—the downward migration is in October, when immense numbers are captured in V-shaped traps—where they meet the males for the first time. It is probable, however, that the habit of returning to the sea to spawn which is characteristic of the species has been discarded in the case of those which live in large bodies of fresh water like our lakes. Further information on this point is desired.

The eels are found on spawning grounds of other fish, but they are not exclusively spawn-eaters, for they devour nearly all kinds of aquatic animals, and attack even the fish in the gill-nets to the despair of the fisherman. It is considered an excellent food-fish by many, and is taken for this purpose in considerable quantities.

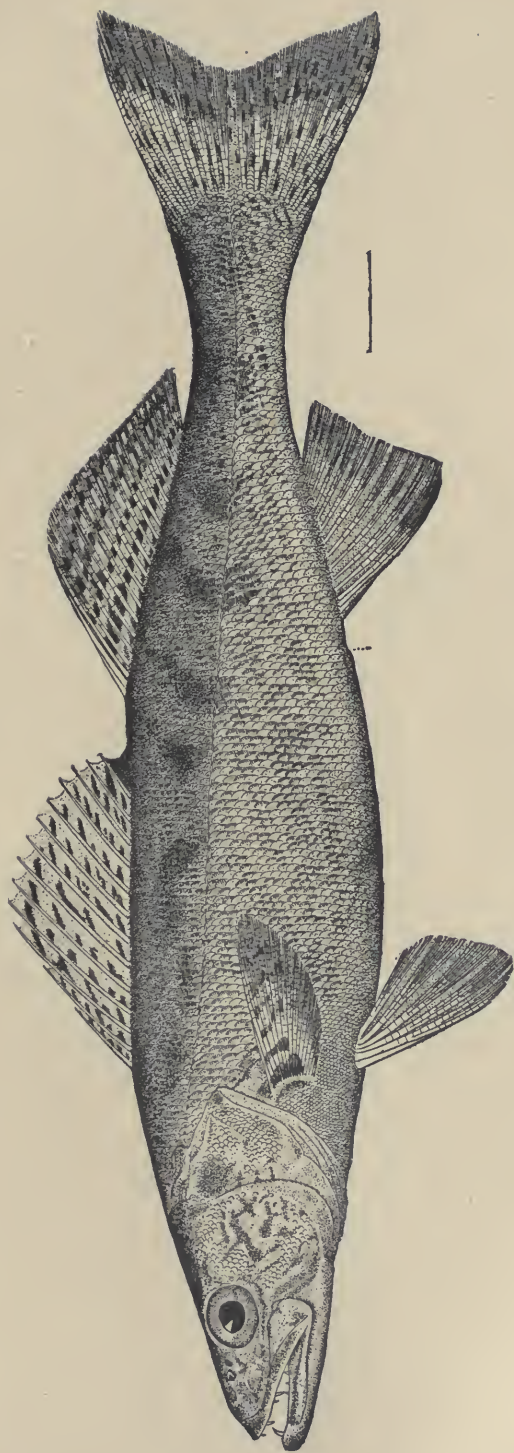
PHYSOCLYSTI.

The Physoclystous fishes, to which we now proceed, are not only marked by the absence of a duct communicating between the air-bladder and the intestine, but by the far forward position of the ventral fins (thoracic or even jugular), and by the spines which largely replace the soft rays of the dorsal and anal fins of the preceding soft-finned fishes.

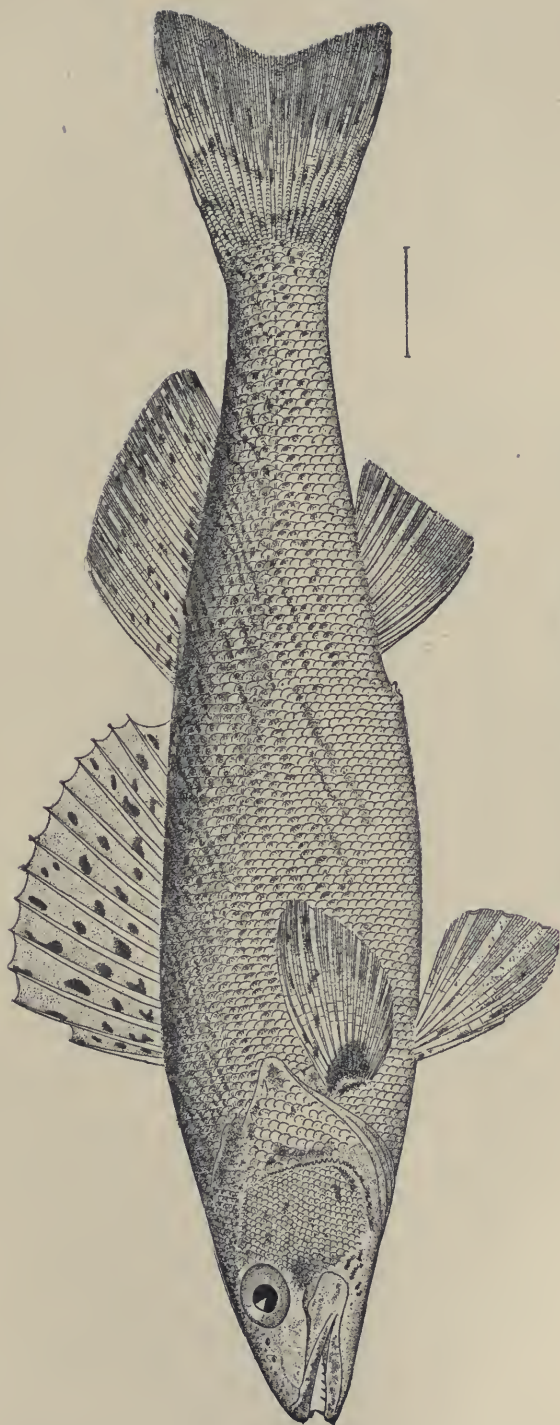
With the exception of the Sandre, (Pickerel as it is called in Ontario, or Doré in Quebec), there is no fish belonging to this group which can be said to be of importance to the Fisheries, but there are numerous forms of interest to the sportsman, and among them the members of three closely allied families, the Percidæ, Centrarchidæ and Serranidæ, of which the perch, black bass and striped bass, may be mentioned as types. The rounded form of the body in the perch family is very different from the deep and compressed form of the two other groups, while the most important difference between these is that the pseudobranch is present in the striped bass and its allies. Again the perch and the striped bass have two separate dorsal fins, while these are confluent in the black bass and sunfishes.



THE YELLOW PERCH (*Perca americana*).



THE PICKEREL DORE, WALL-EYED PIKE OR AMERICAN SANDRE (*Stizostedion vitreum*).



THE SAUGER OR CANADIAN SANDRE (*Stizostedion canadense*).

Apart from a peculiar little group of fishes known as darters (*Etheostomatinae*), the PERCIDÆ proper include only the common yellow perch (*Perca americana*), and the Sandres, pike-perches or pickerels referred to above—two species forming the genus *Stizostedion*. The darters have been little studied in Ontario; they may be described as dwarf perches which have taken to live in small and rapid streams, and have acquired in accordance with their surroundings, the very characteristic bright colouring, powerful fins, and rapid movements of the group. The largest is *Etheostoma (Percina) caprodes*, the log-perch, which may measure six inches or more, but the sand-darter, *E. (Ammocrypta) pellucida*, and other species which occur in the Province, are rarely more than two or three inches in length. Information with regard to these minute forms would be of scientific interest.

The yellow perch is a familiar fish, very similar in its habits to the European perch. It is common in the shallow waters of the lakes, and finds its way in considerable quantities into the market. It is of fair quality and occasionally weighs as much as 1½ lb., but is not regarded as a valuable food-fish like the following.

Two species of Sandres or pike-perches (so-called as they are carnivorous perch-like fish, attaining the size of a pike) occur in North America, and are abundant in the waters of the Province. They receive widely different names in different localities. The more valuable food-fish of the two, which attains a length of three feet, and a weight of 10 to 20 lb., is *Stizostedion vitreum*, and is commonly known in the Province as the pickerel, (a name which should be reserved for the lesser American pike, p. 451), or among the French as the Doré, from its prevailing yellow colouration. It might be preferable to introduce for it the name which Richardson employs in his Fauna Boreali Americana, the "Sandre," a name which is also used for the European representatives of this group.

The genus differs from *Perca* chiefly in the shape of the body, which is elongated instead of oblong, and in there being strong canine teeth on the jaws and palatines. The second species, *S. canadense*, known as the "Sauger" in Lake Erie, is much smaller, rarely exceeding fifteen inches in length, and has a rounder body. It has four to seven instead of three pyloric ceca and a distinctive black blotch at the base of the pectorals, while the larger species has a similar blotch on the hinder part of the spinous dorsal fin. The Sauger also has a rougher head, smaller scales, and a greater number of spines on the gill-cover.

The Pickerel or Sandre is undoubtedly one of the most valuable food-fish we possess, and is only inferior economically to the Lake Trout on account of its inferior numbers. It shares the habit of the other large lacustrine species in retreating to the deep water in the heat of summer. It is, therefore, taken then only in gill-nets; but, when in shallow water, as for example in the spring when it spawns, it not infrequently is taken in considerable numbers from the pounds. In winter many are speared through the ice with the aid of a decoy fish.

Further information is desirable with regard to the distribution in the Province of the two species, as to their spawning habits, and as to the increase or decrease in their numbers. The impression prevails in the lower lakes that the Pickerel have increased of recent years, and this is attributed, in Lake Ontario, to the introduction of alewives into the lake.

To the family CENTRARCHIDÆ belong the various species of Bass and Sunfish—species which, with the exception of the Black Bass, do not attain to any size, but which are all regarded as excellent food-fish. From an economical point of

view the Black Bass must be regarded as among the more valuable fish, as although not swelling the lists of market fish as do the Whitefish, Lake Trout, and Pickerel, it is, nevertheless, as much sought after by sportsmen as the Brook Trout and the Maskinongé.

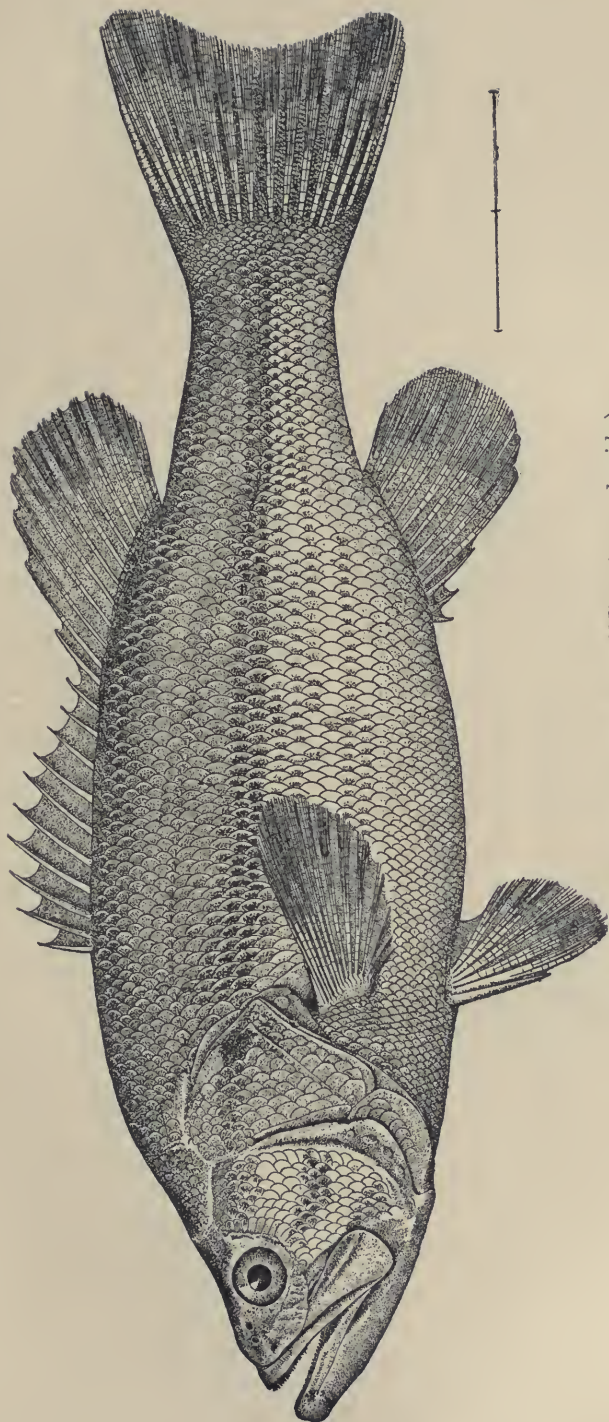
The two species of Black Bass, the small-mouthed and the large-mouthed, both belong to the genus *Micropterus*, and are distinguished as *M. dolomieu* and *M. salmoides*. Both agree in the elongated oval compressed form of the body, the deep division in the course of the dorsal fin, which is much larger than the anal, and the fin-formula which is D. X, 13; A. III, 11; but the species differ in that the maxillary bone in the small-mouthed species does not extend beyond the orbit, whereas it does in the large-mouthed form. Again, the scales are somewhat larger in the latter, so that they are only 7 to 8 rows above the lateral line and 65 to 70 scales in its course, while in the small-mouthed species 70 to 80 scales occur in the lateral line, and there are 10 to 12 rows above it. Further, the dorsal fin has a deeper notch in the large-mouthed form, which is also thicker through the shoulders, deeper in the body and less agile than the small-mouthed form. No dependence is to be placed on differences of colouration, for the variability in this regard resulting from surroundings is extreme. Mr. Henshaw in his Book of the Black Bass states that it would be possible to recognize from which of twenty small lakes within a radius of eight miles, in a district of Wisconsin known to him, any particular specimen of bass came. Where, however, the species co-exist, the tendency is for the small-mouthed species to incline to sombre hues, the large-mouthed to pale green, although the small-mouthed form is often yellowish in places. In the young, the colouration of the two species is more distinct, *M. salmoides* having a distinct dark lateral band and three dark cheek-stripes, while *M. dolomieu* has interrupted lateral blotches but no band, and three distinct olive cheek-stripes.

The geographical range of both species is very wide, but it is probable that it will be found that *M. salmoides* occurs further to the north than does *M. dolomieu*. They affect different surroundings, the large-mouthed species being especially found in deep pools around sunken logs, while the small-mouthed occurs in rocky streams and about gravelly shores. Their respective vigour and gaminess is said to depend on the water in which they occur. Both species have a musky odour when caught, the source of which is not understood.

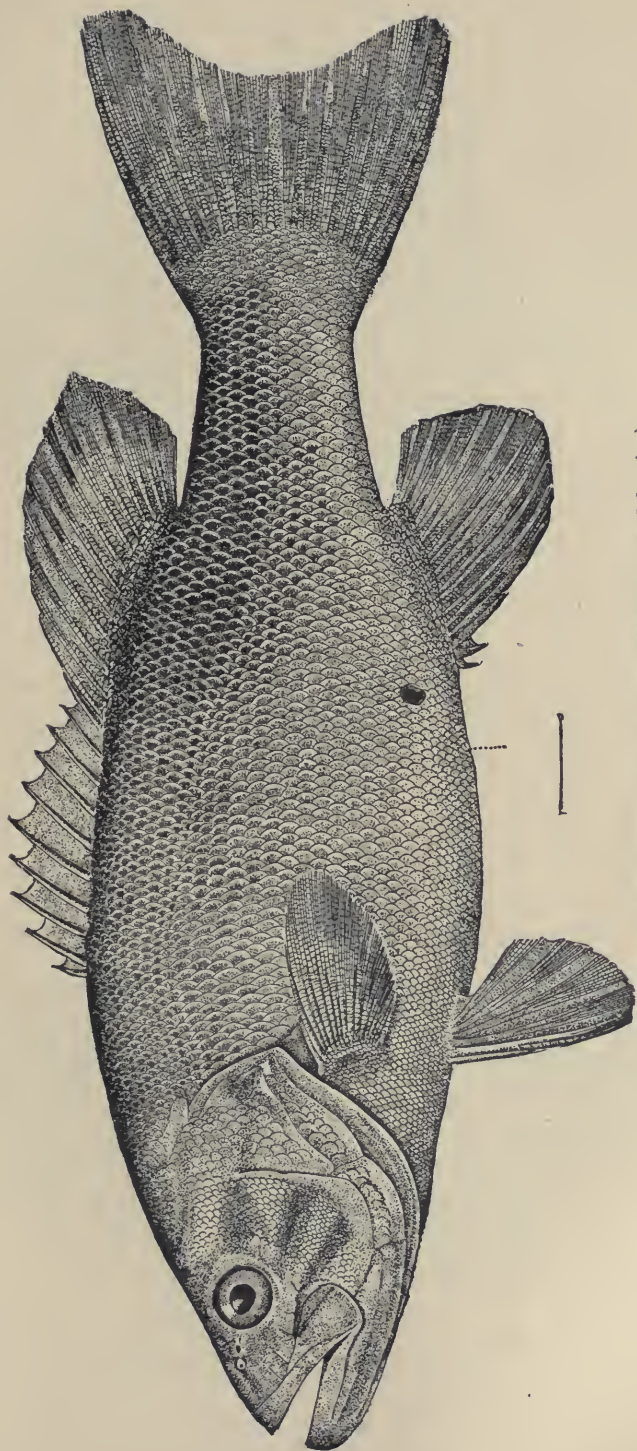
The food of the Black Bass varies with its age, the fry eating various minute larvæ, the young fish, worms and tadpoles, and the adults, crayfish, frogs, mussels and watersnakes.

Unlike Pickerel, Pike and Perch, the Black Bass hibernate (except in the extreme south) burying themselves in mud and weeds, often under the shelter of a sunken log. They leave their winter quarters a month or six weeks before spawning time, when they run in the streams and shallower parts of the lakes, possibly on account of the greater percentage of oxygen in the water there. Thereafter they pair and form their nests on a gravelly or sandy bottom, or on a rocky ledge in from eighteen inches to three feet of water in streams, but in somewhat deeper water in lakes. The nests are circular in form, twice the length of the fish, are often placed quite close to each other, and, where possible, adjacent to deep water or to patches of weeds, to which the parents can retire if disturbed.

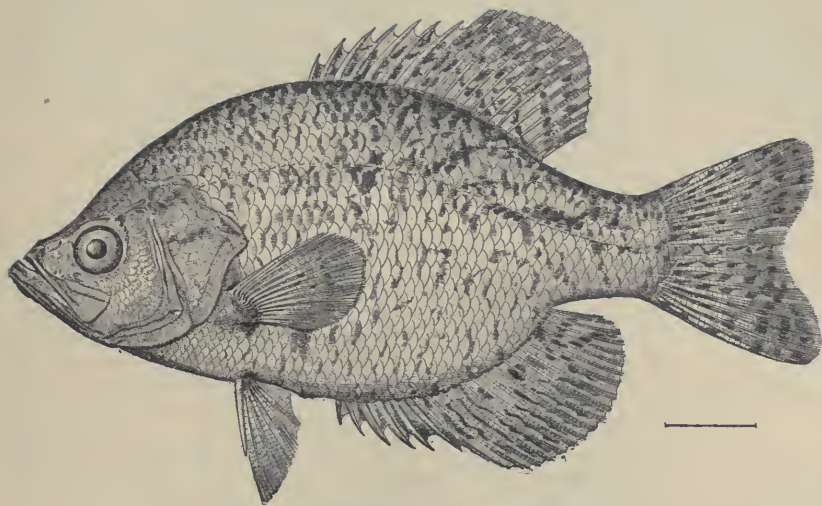
The spawning time varies with the temperature of the region, from early spring to midsummer, but it also varies in the same region from two to three weeks, shallower waters reaching more rapidly the suitable temperature than do deeper waters.



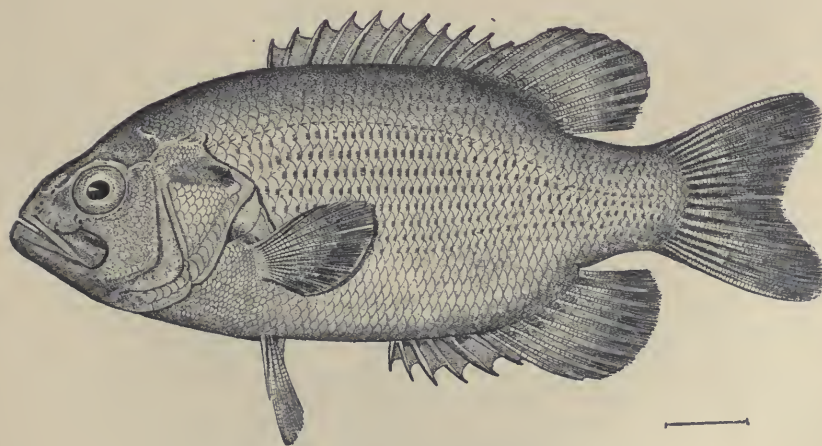
THE LARGE-MOUTHED BLACK BASS (*Micropterus salmoides*).



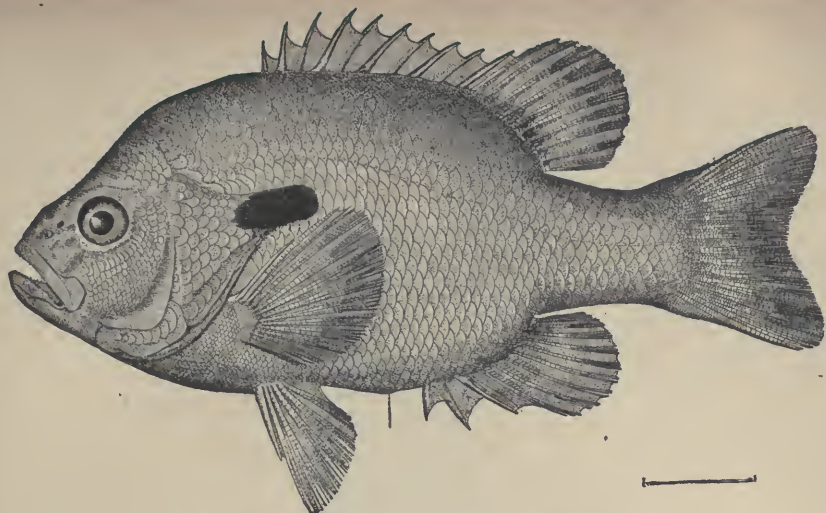
THE SMALL-MOUTHED BLACK BASS (*Micropterus dolomieu*).



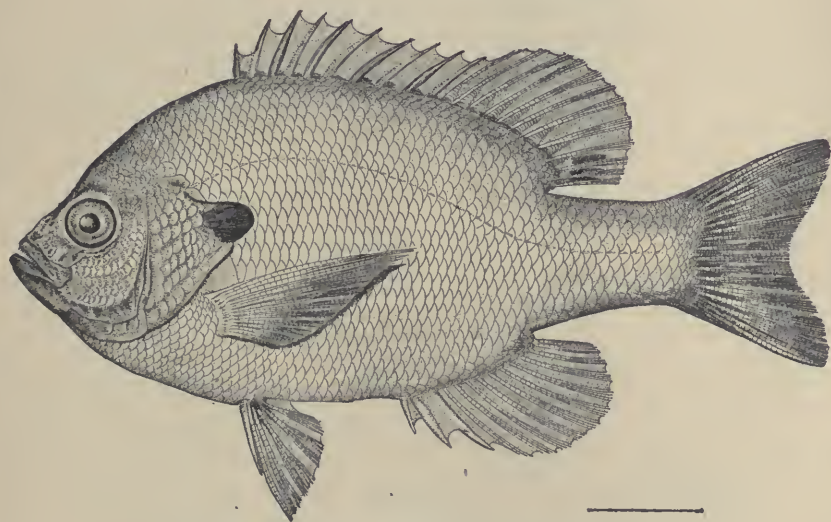
THE GRASS BASS (*Pomoxys sparoides*).



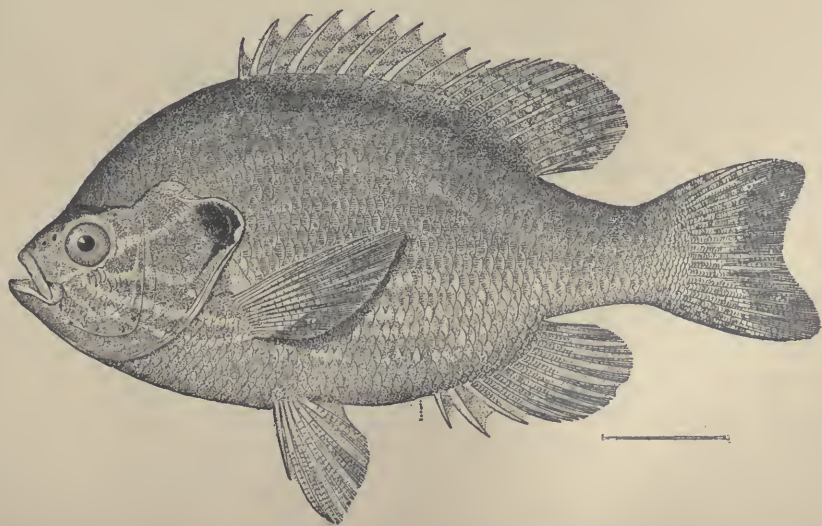
THE ROCK BASS (*Ambloplites rupestris*).



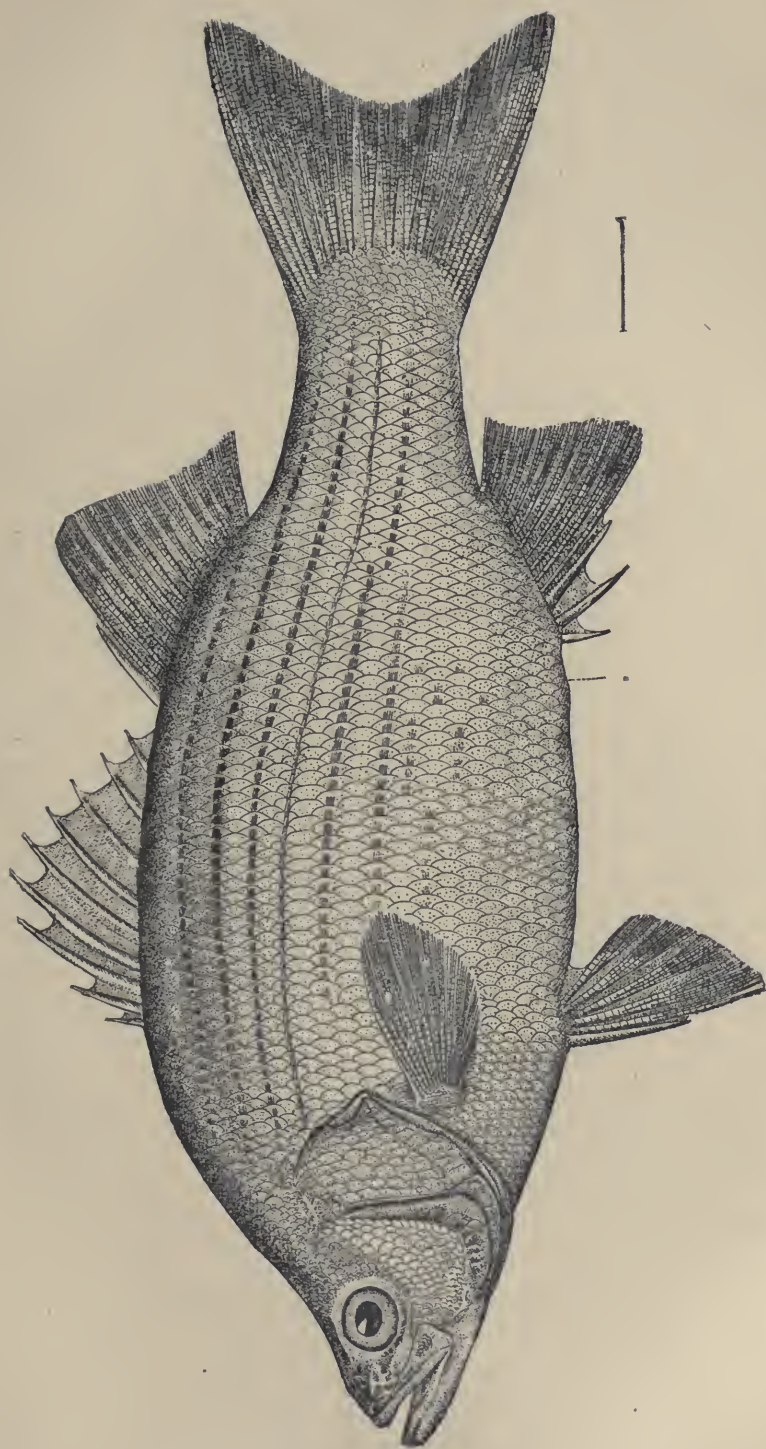
THE PUMPKIN-SEED OR SUNFISH (*Lepomis gibbosus*).



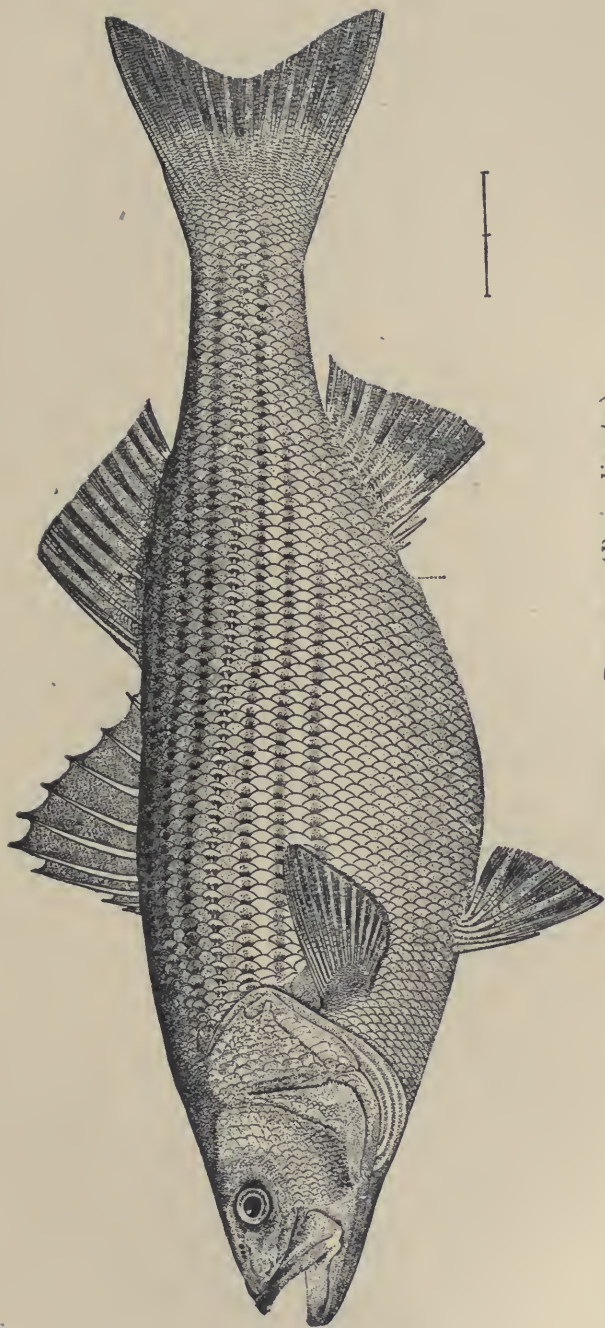
THE LONG-EARED SUNFISH (*Lepomis auritus*).



THE BLUE SUNFISH (*Lepomis pallidus*).



THE WHITE BASS (*Morone chrysops*).



THE STRIPED BASS OR ROCK-FISH (*Morone saxatilis*).

The nests are fashioned with great care by the female, sand and silt being fanned out from between the pebbles by the fins, and other objects removed by the mouth; or if the nests are on muddy ground, as is occasionally the case, they may be paved with sticks and leaves. The male then joins the female, and bites and presses out the roe (which may amount to a quarter of her weight) while she lies on her side, an operation lasting two or three days. Thereafter the male scatters the milt over the eggs, and both parents stay by the nest preventing the approach of spawn-eaters during the eight to ten days required for the hatching process, and subsequently protect the fry, covering the nest and aerating the water in it with their fins for the three or four days during which the young remain in the nest before making off for the deep water. In spite of the vigilance of the parents many depredators, such as frogs and sunfish, get opportunities of making havoc with the fry.

By the end of the first year the fish are four inches long, and are mature at two years, when they measure from eight to twelve inches in length, but spawn much later than older individuals. They gain about a pound a year in weight thereafter, till they reach the limit of weight of the adult, which is from six to eight pounds for the large-mouthed species and four to five for the small-mouthed.

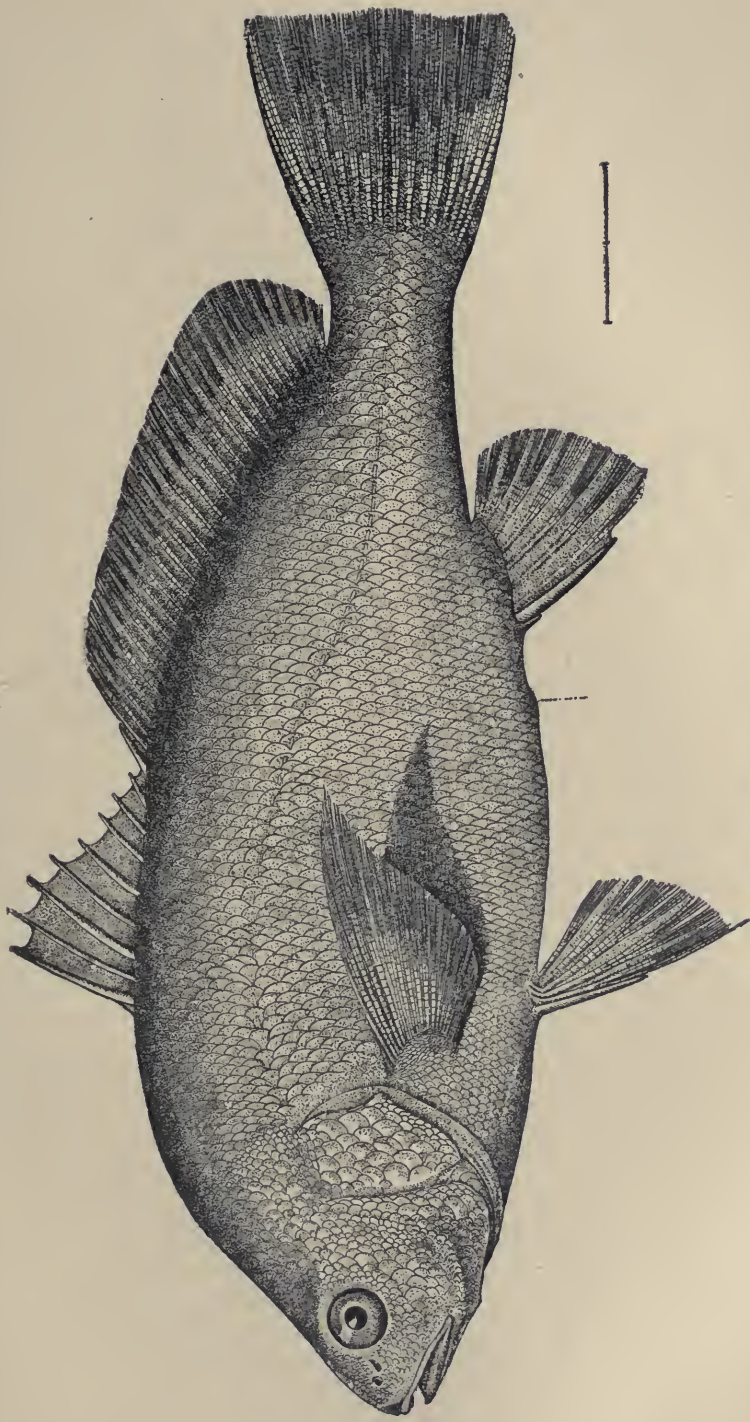
Of the other members of the same family there may be mentioned the Grass or Calico Bass, (*Pomoxys sparoides*), the Rock Bass or Red Eye (*Ambloplites rupestris*), and the common Sunfish, (*Lepomis gibbosus*.)

The first of these is distinguished by its very long anal fin, (the formula is D. VII or VIII, 15; A. VI, 17 or 18,) and occurs in quiet, clear ponds, with grassy bottoms to which its colour is assimilated. It attains occasionally a weight of two pounds, but is not such a game fish as the preceding. The remaining species are of smaller size, the Rock Bass differing from the Sunfish in its larger toothed mouth, and in having six instead of three anal spines.

All the Centrarchidæ spawn in the spring like the Bass, and seem to have the same habits of looking after the fry. There appear to be four or five species of Sunfish (*Lepomis*) within the Province, but their distribution is not well understood.

Unlike the preceding families the SERRANIDÆ constitute a characteristically marine group, and there are only a few forms which live in brackish or fresh water. Both of the species which have been reported from Ontario belong to the genus *Roccus*, viz., the Striped Bass, (rock-fish of the Atlantic coast) *Roccus lineatus*, and the White Bass, *Roccus chrysops*, an exclusively fresh-water form.

The former can hardly be regarded as a native of the Province; it ascends the St. Lawrence as far as Quebec, and has been taken at the mouth of the Niagara River, but is essentially a brackish water form, and is regarded as the best marine game-fish. The latter is, on the other hand, common in the Great Lake Region, and attains a weight of from one to three pounds. They were formerly still commoner in Lake Erie, so as to be of commercial value and not only of interest to the sportsman; their disappearance is probably due to the multiplication of pound-nets, but is not regretted by fishermen as they were very destructive to whitefish spawn.



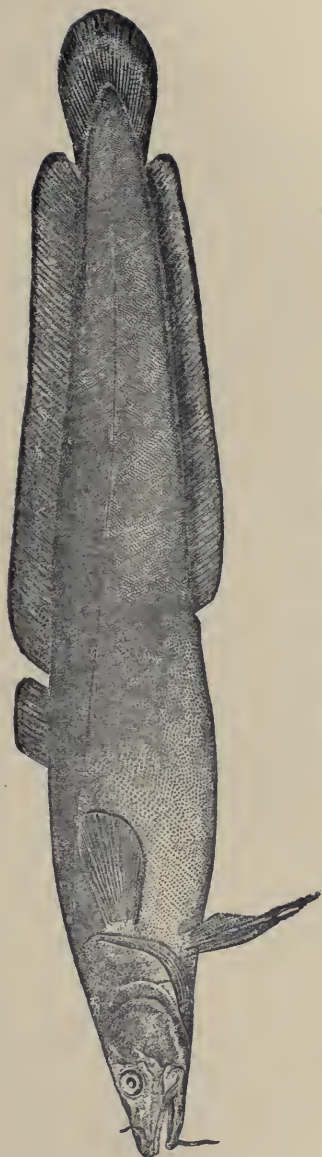
THE LAKE SHEEPSHEAD (*Aplodinotus grunniens*).

Another marine family represented in our fresh waters is that of the SCIENIDÆ, fish of compressed and elevated body with a long dorsal fin, thoracic ventrals, and a complicated air-bladder. The Lake Sheepshead (*Aplodinotus grunniens*) is the only fresh-water species; it is sometimes spoken of as the Lake Huron Drum, from a peculiar grunting noise which it produces, and which is attributed by some to movements of the air in the air-bladder, and by others, with more probability, to the crunching up of the crayfish on which it lives, by the broad grinding teeth of the lower pharyngeal bones, which are most characteristic of the species. The fish attains a length of four feet and a weight of fifty to sixty pounds, but is not valued for food, at least not from the Great Lakes.

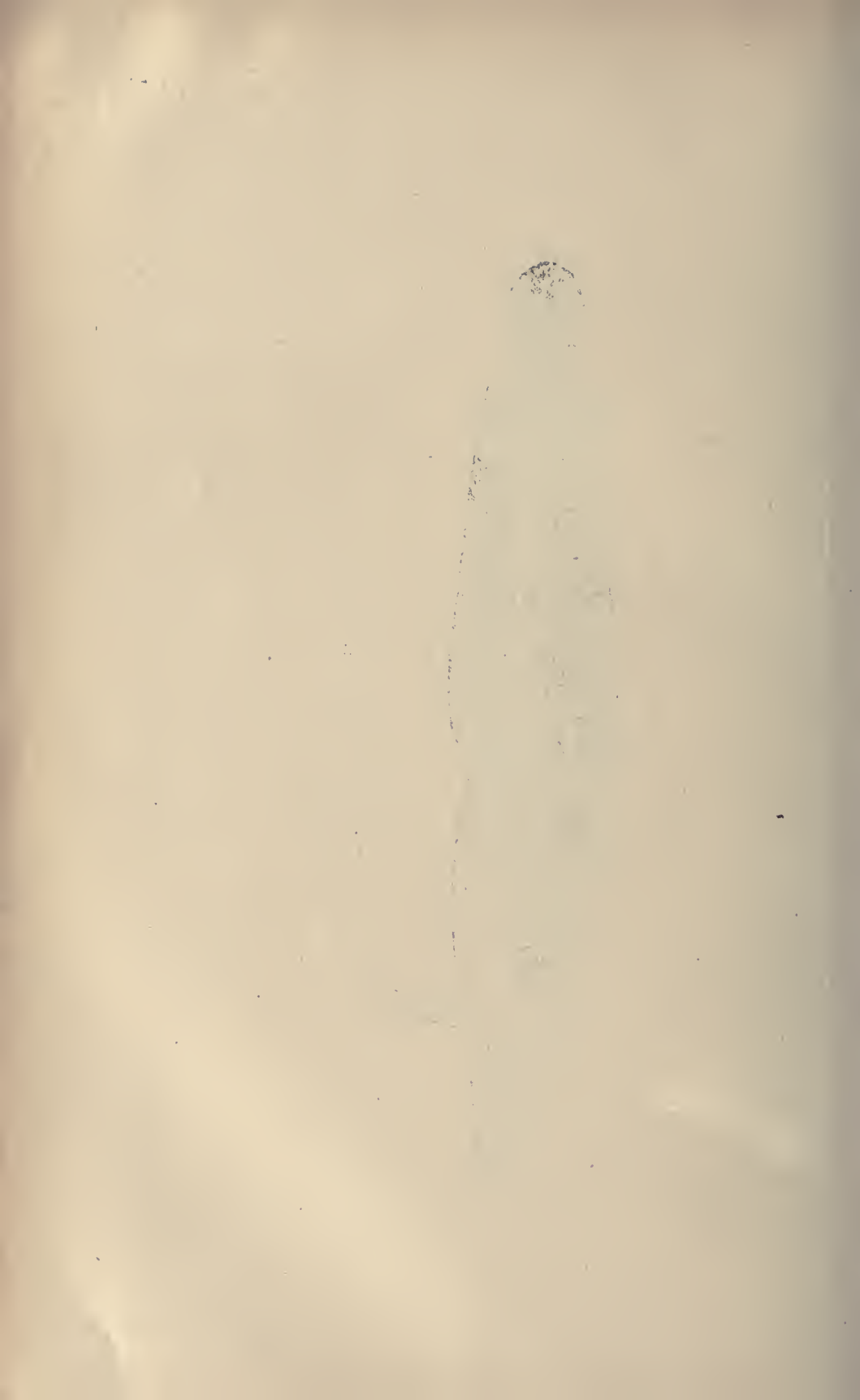
Before leaving the spiny-rayed fishes reference may be made to two families of minute fishes which differ conspicuously in their appearance and habits, but which have one or two fresh-water species. The first of these is the GASTEROSTEIDÆ (Sticklebacks), distinguished by the absence of scales and the presence of bony plates, which clothe the sides. Two species are common in the Great Lake Region, *G. pungitius*, the nine-spined Stickleback, and *G. (Eucalia) inconstans*, the five-spined species. Both are spawn-eaters, and are characterized by the elaborate nest built out of glandular secretions of the males, and defended by them with great vigour.

The second family is that of the COTTIDÆ or Sculpins, represented in our fresh waters by several species of Miller's Tumbbs, *Cottus richardsoni* and others, and characterized by the high position of the eyes, smooth skin, spiny head, and long dorsal fin, (D. VIII, 17; A. 12.) They are always of small size and appear often to be confined to the deep waters of the lakes.

The only other family of Teleosts represented in the fresh waters of the Province is that of the GADIDÆ or Codfishes, a characteristically marine group embracing some of the most important of food-fishes; but, in as far as the one genus confined to fresh water (*Lota*) is concerned, entirely unimportant economically. This genus is also represented in Europe by a closely allied species, and is known as the Burbot; it is therefore convenient to use the name American Burbot for our form, *L. maculosa*, which is common in the deep waters of the lakes, although its nomenclature is very varied. It is abundant northward and westward, where it is known as the Mathemeg of the Indians and "La Loche" of the voyageurs. It hardly reaches the markets from the Great Lakes, being considered a very poor fish, but in the fur countries it would appear to be more appreciated, the liver and roe especially being regarded as delicacies. It spawns in March, and is very prolific; as it is a carnivorous and voracious fish it is probably to be regarded as an enemy at least to the young of more edible fishes. It attains a considerable size and weight, up to forty-five pounds, and is heavier in the more northern waters. As in all the Gadidæ, the dorsal and anal fins are long and contain only soft rays. (The formula is D. 14—76, A. 68). The body is long and compressed behind, the head small and broad, provided with barbels, the skin thick and mucous with small imbedded scales and the general colouration dark olive marbled with black, but paler beneath. Like so many fresh-water fish common to rivers and lakes, it attains to comparatively insignificant dimensions in the former.



THE BURBOT (*Lota americana*).



THE FISHERIES OF ONTARIO.

In the preceding section the natural history of the species of fish which are important from an economical point of view has been treated at considerable length. We must now proceed to consider their absolute and relative economic importance, their relative frequency in different parts of the Province, the nature and value of the apparatus employed in the fisheries, and the number of men who find occupation in connection therewith.

In discussing the subject it is necessary to remember that so far it is only the Great Lakes which have become of great economical importance, and that the possibilities as important sources of a cheap food supply of the inland waters of the Province have not yet attracted public attention.

The following Tables extracted from the last Dominion Fishery Report give valuable information on the points in question.

It appears from Table I. that of 3,045 men employed in the Fisheries of the Province about one-fifth are from Lake Ontario. Lake Erie comes next with 526, Georgian Bay with 436, Lake Huron with 427, Manitoulin division with 387 and Lake Superior with 119.

It also appears that the Georgian Bay heads the list with regard to the number of fathoms of gill-nets in use, Lake and River St. Clair by the seines in use, and the lower part of Lake Ontario by the smaller hoop-nets, while Lake Erie is distinguished by its number of pound-nets.

Table II. informs us of the relative value of the fisheries, the Georgian Bay being at the head of the list with \$530,498, out of a total \$2,009,637, Lake Erie next, followed by the Manitoulin division, Lake Huron, Lake Superior and Lake Ontario. We also learn from it that the Georgian Bay stands at the head of the list in both Whitefish and Lake Trout fisheries, that Lake Erie on the other hand comes first in the Herring, Sturgeon, Bass, Pickerel and coarse-fish fisheries, that Lake Sezug is the headquarters of the Maskinongé fishery, that the greater proportion of Pike come from the River St. Lawrence, and of Eels from Wellington county, including the Credit River.

From Table III. we learn that the following is the relative economic value of the various species of food-fishes, not classified as miscellaneous or coarse fish :

1. Whitefish.
2. Lake Trout.
3. Lake Herring.
4. Pickerel.
5. Sturgeon.
6. Bass.
7. Maskinongé.
8. Pike.
9. Eels.

TABLE I.

RECAPITULATION of the Number and Value of Vessels, Boats and Fishing Materials, the number of men employed, etc., with the Kinds and Quantities of Fish, in the Province of Ontario, for the year 1890.

NAME OF DIVISIONS.	VESSELS AND BOATS EMPLOYED.				FISHING MATERIALS.					
	Vessels or Tugs.		Boats.		Gill Nets.		Seines.		Pound Nets.	
	No.	Tonnage.	Value.	Men.	No.	Value.	Fathoms.	Value.	No.	Value.
Lake Superior Division	6	242	9200	23	42	5160	96	94612	15	5340
Manitoulin "	13	287	21400	65	104	13400	272	208000	29	10650
Georgian Bay "	15	360	39400	58	152	29040	378	733600	465	550
Lake Huron "	10	502	17300	51	131	19110	367	152200	37	7350
River and Lake St. Clair Division					57	1159	221	8205		
Detroit River Division					25	724	106	1400	4	1000
Lake Erie "	12	163	16700	52	264	18775	474	246000	197	56810
Lake Ontario "	1	15	1200	2	106	8680	239	92000	3	450
Prince, Edward and Bay of Quinté Division	3	30	8000	9	114	2130	315	45500	117	2350
Lennox, Addington and Frontenac "					46	1170	89	105000	23	630
Wolfe Island and Kingston "					24	580	29	4576	45	483
Rockport, Brockville and Cornwall "								980	40	350
Prescott, Russell and Carleton "								577		
Leeds and Lanark Division					8	107	38	350	34	600
Renfrew County "					4	96	9	3800		
Lake Nipissing "								266		
Parry Sound and Muskoka Division										
Wallington County Division										
Lake Simcoe Division										
Lake Scugog and River Division	1	15	1800	3	200	3000	150			
Victoria County Division										
Peterboro "										
Totals	61	1614	115000	263	1277	102131	2782	1369738	285	81600
								30512	283	4738

NAME OF DIVISIONS.	KINDS OF FISH.														VALUE.	
	Whitefish, barrels.	Whitefish, lbs.	Trout, lbs.	Trout, barrels.	Herring, barrels.	Herring, Fresh, lbs.	Eels, lbs.	Sturgeon, lbs.	Maskinongé, lbs.	Bas, lbs.	Pickereel, lbs.	Pike, lbs.	Coarse Fish, lbs.	Home Consumption, lbs.	\$	c.
Lake Superior Division	432	892000	530800	807	.....	4000	.....	97400	.....	.....	90000	.....	45000	36300	150713	00
" Mantoulin	1482	2236400	731840	842	.....	.....	.....	106050	.....	.....	170850	7100	22200	16800	293475	00
" Georgian Bay	540	2838000	2444000	760	332	12000	.....	21000	5000	114000	464300	31000	26100	131000	530498	00
" Lake Huron	1511	139820	1100650	1550	4660	414700	.....	223750	.....	9200	182100	300	39900	213400	223752	60
River and Lake St. Clair Division	.....	20800	41000	.....	812	139500	.....	12000	5910	17670	142120	10580	181400	34150	33644	50
Detroit River Division	.....	38600	.....	.....	.....	59850	.....	34100	1040	600	15050	5500	51900	1000	11199	90
" Lake Erie	.....	204322	1500	.....	.....	5393000	.....	580610	400	134650	961350	62820	532240	538000	422464	56
" Lake Ontario	.....	8050	20760	.....	351	2087200	15400	34400	195000	128855	51700	57020	373400	.....	148046	30
Prince Edward and Bay of Quinté Division	102	218400	80000	.....	270	269500	5400	940	956	2890	31700	49350	330000	.....	55925	26
Leunox, Addington and Frontenac	.....	158500	35200	.....	.....	6000	5200	.....	1000	5500	55250	22800	32100	.....	22030	00
Wolfe Island and Kingston	.....	.....	2600	.....	.....	.....	6700	6300	1500	5200	.....	88700	52000	.....	7313	00
Rockport, Brockville and Cornwall	.....	800	.....	.....	.....	.....	12900	4000	4500	74200	3900	214800	361800	.....	27364	00
Prescott, Russell and Carleton	.....	1500	1600	.....	.....	1200	6100	4000	7400	8000	9500	10000	90800	.....	5405	00
Leeds and Lanark Division	.....	1600	1800	.....	.....	.....	400	.....	4000	4000	2000	2600	56350	.....	2544	50
Renfrew County	.....	.....	.....	.....	.....	.....	835	460	1900	2130	290	3450	15025	.....	1424	75
Lake Nipissing	.....	.....	.....	.....	.....	.....	.....	6000	.....	.....	15500	24900	46000	.....	3975	00
Parry Sound and Muskoka Division	.....	.....	23400	.....	.....	.....	.....	.....	500	4000	5500	500	24030	.....	3685	00
Wellington County Division	.....	.....	6000	.....	.....	30000	55000	.....	.....	2500	.....	3000	4500	.....	6960	00
Lake Simcoe Division	.....	1500	32500	.....	.....	10030	4000	.....	26300	45400	7000	43000	23000	.....	11492	00
Lake Scougog and River Division	.....	.....	.....	.....	.....	.....	4000	.....	250000	100000	.....	.....	150000	.....	25740	00
Victoria County Division	.....	.....	1000	.....	.....	4000	1000	.....	30000	20000	5000	.....	6000	.....	3840	00
Peterboro'	.....	2000	20000	.....	.....	5000	1400	.....	120000	100000	.....	.....	30000	.....	17350	00
Totals	4067	6782292	5074650	3959	6425	8435950	125235	1132970	651406	778795	2216520	637420	2556515	965650	2009637	37

RECAPITULATION

Of the Yield and Value of the Fisheries in the Province of Ontario, during the year 1890.

Kinds of Fish.	Quantity.	Prices.	Value.
		\$ c.	\$ c.
Whitefish	brls. 4,067	10 00	40,670 00
"	lbs. 6,782,292	0 08	542,583 36
Trout	" 5,074,650	0 10	507,465 00
"	brls. 3,959	10 00	39,590 00
Herring, salted	" 6,425	4 00	25,700 00
" fresh	lbs. 8,435,950	0 05	421,797 50
Eels	" 125,235	0 06	7,514 10
Sturgeon	" 1,132,970	0 06	67,978 20
Maskinongé	" 651,406	0 06	39,084 36
Bass	" 778,795	0 06	46,727 70
Pickeral	" 2,216,520	0 06	132,991 20
Pike	" 637,420	0 05	31,871 00
Coarse fish	" 2,556,515	0 03	76,695 45
Home consumption, not included in the above	" 965,650	0 03	28,965 50
Total for 1890			2,009,637 37
" 1889			1,963,122 80
Increase			46,514 57

STATEMENT showing the Number and Value of Vessels, Tugs, and Boats, etc. in Ontario, during the year, 1890.

Articles.	Value.
	\$ c.
61 vessels or tugs (tonnage, 1,614)	115,000 00
1,277 boats	102,131 00
1,369,738 fathoms of nets	229,462 00
27,554 " seines	30,512 00
285 pound nets	81,600 00
233 hoop nets	4,738 00
Number of Men employed, 3,045.	563,443 00

On the other hand the relative value per pound is :

1. Lake Trout, 10c.
2. Whitefish, 8c.
3. Eels, Sturgeon, Maskinongé, Bass, Pickerel, 6c.
4. Herring, Pike, 5c.
5. Coarse fish, 3c.

While these tables give some information as to the geographical distribution of the principal food-fishes, further details are required in regard to the more remote bodies of water.

It is known that the Lake-of-the-Woods is chiefly characterized by its abundant Sturgeon, the principal food of the numerous Canadian Indians (1,000) living near its borders, and the proposition has recently been made that these waters should be closed to commercial enterprise and be reserved for the Indians, as has been done by the United States Government for the portion under its control, pound-nets being prohibited to prevent wasteful fishing. In one year 46 tons of Sturgeon, 29 of Whitefish, 12 of Pickerel and 1 of Trout have been taken from these waters, which, therefore, if properly taken care of, should form a neverfailing source of food-supply for the population on their borders.

FISHERY LEGISLATION.

The following are the chief provisions of the Dominion Fishery Laws which affect this Province :

CLOSE SEASONS.

Brook Trout (<i>Salvelinus fontinalis</i>)	Sept. 15 to May 1, inclusive.
Pickrel	April 15 to May 15, "
Bass and Maskinongé	April 15 to June 15, "
Whitefish	Nov. 1 to Nov. 30, "
Lake Trout	Oct. 15 to Nov. 30, "

There is no close season for Sturgeon or for Lake Herring.

Net fishing is prohibited in public waters, except to holders of a purchasable license. The size of the nets is submissible to regulation, and the nets must not be set nor seines used so as to intercept channels or bays.

Explosives and poisons for killing fish are illegal, mill-dams must have passes, and mill-refuse must be destroyed.

It is desirable that enquiry should be made as to the adequacy of the protection afforded by the close seasons at present prescribed. It is possible that in certain waters an extension is required. In Lake Megantic, *e.g.*, it is reported that the Lake Trout have finished spawning by the 1st of October, while Mr. John H. Willmott, of Beaumaris, Ontario, Fishery Overseer for the Muskoka District, reports in 1890 their spawning season as from October 8th to 20th for this region. Again in the North-west it is reported that the Whitefish spawn earlier than is the case in the Georgian Bay, so that if the close season were assimilated to that of Lake Trout, the change would have more to recommend it than the mere simplification of the law and its efficient carrying-out. It is even reported that the run of Whitefish may occur within our waters after the 30th of November, so that an extension in the other direction might also be considered.* Such differences indicate that further information is required as to the spawning habits of our food-fish from all parts of the Province, so that future legislation may provide for the protection of waters lying at a distance from the present commercial centres.

Although the absence of a close season for Lake Herring does not appear to have so far affected the results of the Fisheries in Lake Ontario, complaints are being made that the Lake is being depleted of the more valued Cisco (p. 447), and that consequently some measure should be taken to protect this variety. A close season during July and August has been suggested.

* Brook Trout have been observed to spawn in Central Ontario three weeks earlier than the beginning of the close season.

Again, the increasing commercial value of the Sturgeon is likely to lead to a more systematic pursuit of this fish, and it appears to be advisable that it should be spared during its spawning season (May 1st to June 15th), and possibly that efforts should be made to increase the numbers by breeding.

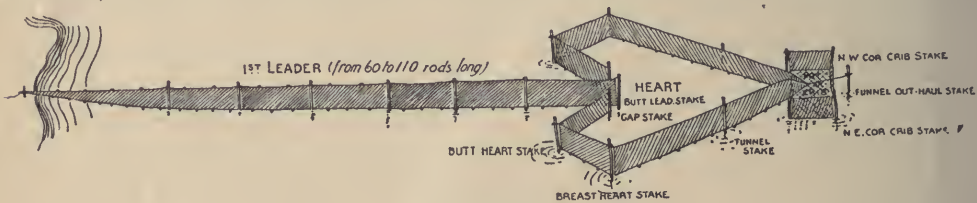
The revenue derived by the Dominion Government, under the laws at present in force, from rents, license-fees and fines within the Province amounts to \$23,666 out of a total \$56,976, while the expenditure within the Province on Inspection amounts to \$14,539 out of a total \$65,873, and on Fish-breeding (to which reference is made hereafter) to \$11,492, out of a total \$39,126.

Ninety-five Fishery Overseers and six Wardens are employed by the Dominion Government for purposes of protection. As pay is often merely nominal, the inspection can hardly be regarded as satisfactory, especially in view of the enormous length of coast line to be protected. The overseers therefore complain that poachers with fyke-nets or spears are at work as soon as their backs are turned.

APPARATUS EMPLOYED IN CATCHING FISH.

Of these there are two important modifications:—"Pound-nets" (in various forms) for shallow-water fisheries, and "gill-nets" for deep-water.

The pound-net essentially consists of a long net, the so-called "leader" projecting at right angles to the shore for from 300 to 600 yards, and supported by strong stakes of the necessary length, 30 to 60 feet, driven at an interval of 5 or 6 feet. The rim-line of the leader is secured to these at the water-level, while the bottom line is weighted with stone-sinkers. Fish swimming towards the leader are diverted by it into the "heart," a Λ -shaped chamber, the funnel-shaped narrow end of which projects into a "pot" or "crib" some 30 feet square, the floor and walls of which are formed of net, the walls projecting two feet above the water-level. The mesh of the leader is $6\frac{1}{2}$ to $7\frac{1}{2}$ inches, of the heart 3 to 5 inches, of the funnel 3, and of the pot frequently only 2 to $2\frac{1}{2}$, to the destruction of immense numbers of immature Whitefish. Beyond the first crib a second leader, terminating in the same way, and a third—indeed, as many as twenty have been arranged in "strings," if the shallowness of the water admit of it. Lake Erie obviously permits of such destructive use of this kind of apparatus more extensively than any of the other lakes, so that as many as 900 pounds exist on its American side. The average value of a pound-net is from



POUND-NET.

\$250 to \$500, and five men are required to work three nets. A boat of peculiar form is generally used, schooner-rigged with wide square stern, and plenty of beam so as to permit of lifting the pockets or cribs of the pound. They must be able to take a large load of fish and yet have little draught. A special scow is used for driving and pulling stakes, in the spring and winter respectively.

The Fyke-net is essentially a miniature pound, the crib being replaced by two funnels of netting, one opening into the other, and the heart by wings leading to the door of the outer funnel at an angle of 45 degrees. They are used for catching Perch, Catfish, etc. A similar device is the trap-net which is simply a miniature movable pound, the crib of which is held in position by weights and floats.

Pound-nets have largely superseded seines for inshore fishing, but in some favorable places with sandy bottom the latter are still used, as in the Detroit and St. Clair Rivers. They may be 1,000 feet long by 12 feet deep in the middle, where the mesh is narrowest, but shallower and with larger mesh in the wings. Horse-power is sometimes used for hauling the seines.

The second important variety of net used is the gill-net, so-called as the mesh is arranged of such a size ($4\frac{1}{4}$ to $4\frac{3}{4}$ inches for Whitefish— $3\frac{1}{2}$ for Herring) as to catch fish striking the net behind the gill-covers. These nets are set vertically at different depths in deep water, often at right angles to the shore, the lower borders being weighted with stones or leads or iron rings (according to the kind

of bottom), the upper being floated with cedar blocks or with corks. Each net is some 300 or 400 feet long, $4\frac{1}{2}$ — $5\frac{1}{2}$ feet deep, and of $4\frac{1}{4}$ to $4\frac{3}{4}$ inch mesh for Whitefish, and sometimes an inch more for Lake Trout. Ten to twenty or more such nets arranged in a row form a "gang," and four gangs constitute an outfit for four men, two gangs being in the water at one time, and one of these hauled daily.

Certain objections are urged against the use of gill-nets; the catch is often so large as to be unmanageable, and is therefore wasteful, the fish spoil in a few hours, especially if there is much current, and decomposition sets in with great rapidity after death, so that when the nets are hauled many of the fish are not in proper condition for the market, requiring to be punctured and salted before they can be sold. This is especially the case in summer, more particularly so if the lifting of the nets has been delayed a day or so by bad weather. In such a case the fish are all decayed, and too often the net is stripped on the spot, and the decayed fish thrown out to the great injury of the fishing grounds. Again, gill-nets may drift in stormy weather, and be thrown with their contents on some reef, perhaps to the destruction of some good spawning ground. The gill-net fishermen using a comparatively small number of nets to a gang, "a light rig," employ Mackinaw boats, which, unlike the pound-boats, are sharp-sterned to prevent shipping water aft when running with the sea. Larger boats are necessary with "heavy rigs."

Of other varieties of nets, the Trammel net, Dip-net and Beam-trawl may be mentioned. The first is a 3-ply net-work of varied mesh, generally set across the current of a stream during the run of suckers or for catching inshore fish. The Dip-net varies in size, and may be used for catching bait or for emptying the cribs of pounds. The Beam-trawl, so extensively used in British sea-fishing, cannot be employed successfully except on a smooth sandy bottom, and is therefore unavailable in the lakes.

In addition to net-fishing reference may be made incidentally to two other methods:—set-line fishing on a commercial scale, and fishing through the ice. The former is practiced in Lake Michigan successfully for Trout, several gangs of 200 to 500 hooks, strung six feet apart on a line, buoyed by cedar floats, being set in 25 to 50 fathoms water, the hooks being baited with herring attached in as natural an attitude as possible. The "trawl" lines are visited every two or three days, and have in some places proved so successful as to have displaced gill-nets.

Ice-fishing may be effected either by seines or by spearing or by bait-fishing, but hardly attains to sufficient commercial importance to require further notice here.

METHODS OF PREPARATION OF FISH FOR THE MARKET.

Fish are classified for the market as "hard" and "soft," the latter embracing the miscellaneous coarse fish separately enumerated on p. 455. Some fish are dressed; catfish, *e. g.*—which have been classified in the Report of the U. S. Fish Commission as the most important food-fish of Lake Ontario—being always decapitated, cleaned and skinned before being shipped. Again other fish are shipped "round" without any preliminary cleaning. Various methods have been suggested for arresting and preventing the decomposition which fish more than all other classes of food materials so rapidly undergoes.

These are reducible to two:—the use of antiseptic chemicals and the use of a low temperature. The former method has been chiefly adopted in Norway for preserving herring and consists in laying the fish in a mixture of two parts of salt and one of boracic acid (for a barrel of herring, 5 lbs. salt, $2\frac{1}{2}$ lbs. boracic acid) and filling up with a weak solution of the acid. It is said to have the disadvantage of communicating a slight taste to the fish which injures their market value. With an abundant ice-supply at command the second method is preferable, and is sufficient if the fish are not already in bad order before being preserved (p. 465). In the States large refrigerators are employed in which fish may be frozen during any period of the year and preserved till demand arises for them. Sturgeon may thus remain a year in the refrigerator, being stacked there like cordwood. Trout are dressed before being frozen, but pickerel are frozen "round."

Whitefish are occasionally smoked in small quantities for local markets. This is effected in small huts seven feet square, the fish being first cleaned, then placed in brine for three to five hours, impaled in strings of five on sticks and hung up in the smoke of a hardwood fire, the door of the hut being first left open for half-an-hour and then closed for three or four hours. Substantially the same plan is used for kippering Herrings. After the fish are split they are placed for thirty-five minutes in pickle, spitted on fine rods carrying 12 to 20 herrings each and then smoked for five to six hours, the fuel used being the waste sawdust from birch. If a strong colour is required they are afterwards subjected to a shorter or longer exposure to the smoke of other wood—oak, *e. g.*

A passing reference may be made to the ingenious conversion of Lake Erie herring by the use of a suitable stain into canned salmon, an industry which has its headquarters in Cleveland. One of the methods of preserving whitefish employed by the Indians of the North-West is not likely to be adopted generally but is worthy of being noted. The abundant fish caught in spring are dried, smoked, pounded to powder and mixed into a cake with oil from the liver. This with ordinary smoked fish furnishes an important element of food-supply.

A large proportion of the Sturgeon caught on the north shore of Lake Erie are sent to Toledo and Sandusky, where they are further prepared for the market (partly by being converted into smoked Halibut), and where the roes are extracted for the preparation of caviare. Although the American demand for caviare is not great, yet large quantities are shipped to Germany, and it commands good prices—as much as 10 cents a pound. Toledo alone packs 75,000 lbs. in cases of 130 to 150 lbs. each. The method of preparation is as follows: A large fish yields as much as three to five pails of roe, the eggs, which measure about one-ninth of an inch in diameter, varying in number from 800,000 to 2,500,000. The masses of roe, preferably not yet ripe and therefore hard, are taken quite fresh and

placed on a wire screen over a zinc-lined trough four feet long, two feet wide and eighteen inches deep. The meshes of the wire netting are just of sufficient width to allow the eggs to fall through. These are then placed in clean kegs, and the best German (Lüneburg) salt is rubbed in by hand. This extracts in a short time (ten to fifteen minutes) fluid from the eggs, which are then placed in quantities of 8 to 10 lbs. in sieves and drained. The caviare is therefore ready for the market in a few hours. That from the Lake Sturgeon is said to be of superior quality to that of the marine species and there is therefore a constantly increasing demand for it.

Certain economic uses of fish, other than as food, require now to be noticed. One of these is the manufacture of isinglass which has been carried on to a certain extent in the States, and the important source of which is the sounds or air-bladders of Sturgeon. The method employed is to remove from the vertebral column by means of a knife the absolutely fresh sounds, to place them in clean water, and in strong brine on the following day after the thin lining has been scraped off. They are then dried on frames covered with network and finally exposed to the sun for four or five weeks to bleach the isinglass. Such isinglass manufactured at Sandusky, Ohio, to the amount of 3,000 lbs. per annum is worth \$1 a lb.

Sturgeon oil obtained by pressure from the livers brings 40 cents a gallon, and at Sandusky about 25 barrels of oil per annum are secured in this manner. The Sturgeon therefore which was formerly regarded as of no economic importance is destined to be one of the most valuable fish, especially of Lake Erie.

The recent abundance of the Alewife in Lake Ontario has been taken advantage of for the manufacture of fish-oil and guano. After the fish have been cooked twenty minutes they are subjected to hydraulic pressure; a million fish yield 500 gallons of oil and 63 tons of fertiliser.

DECREASE IN NUMBER OF FISH—ITS CAUSES AND REMEDIES.

Apart from such well-known instances of the almost total disappearance of valuable food fishes where they were previously abundant, such as the disappearance of Salmon from Lake Ontario and of the Shad from the lower Ottawa, other cases of waters being "fished out," or of the yield of certain species being on the decline are only too common.

It has been impossible so far to collect evidence showing to what extent waters within the Province previously rich have been depleted; such statistics, however, are much required.

The causes of depletion are twofold: Such as are outside our control, and such as can, by proper remedies be mitigated or avoided.

Among the former are the changes in the conditions of life incident to the opening up of the country for agricultural purposes, the removal of forests, the reclaiming of swamps, the resulting changes in rainfall, or at least in the extent to which surplus rainfall is held back by forest land and underbrush, and thus delivered only gradually and not in torrents through the streams. It is probably to such changes, aided by other causes adverted to below, that we must attribute the disappearance of Salmon from Lake Ontario.

Not only do such changes directly affecting the surroundings of the fish react upon its abundance, but they also have an indirect effect through the food-supply. Brook Trout, as was before observed, have for their natural food the larvæ of various species of gnats and flies, the elimination of which from a cultivated country is looked on as one of the blessings of civilization. There is, however, the reverse side to this advantage, the diminution of the favorable conditions for insect life leading to a disturbance of the food-supply of the insectivorous fish.

Various other obscure causes may interfere with the balance of life in any particular body of water, resulting in the wholesale destruction of one or more forms.

These may be of the nature of epidemic diseases like the Salmon Saprolegnia due to the attack of a parasitic fungus, or in some way animal parasites, causing usually comparatively little injury, may gain the upper hand and be the cause of widespread destruction. For example, Prof. A. C. Lawson brought to me some years ago specimens of an *Argulus* which he had taken from Whitefish dying wholesale in the Lake of the Woods, and shortly thereafter Mr. Washburn published in the *American Naturalist* an account of similar epidemics in inland lakes of Wisconsin. It has been suggested that the increase of the parasite is only possible when the fish are already weakened by some other cause.

Investigations into such cases are much required, and would be of much interest even although it might be impossible to obviate the cause when discovered.

Other causes more immediately under our control are (1) illegitimate and destructive methods of fishing, including the capture of immature fish in immense quantities by the prodigal use of narrow-meshed nets and the use of illegitimate methods of fishing especially at the spawning time, when the habits of most fish expose them far more to destruction than at others; (2) the destruction of spawning and feeding grounds by sawdust or other mill-refuse, or by the decayed contents of gill-nets or offal from fishing boats; (3) the prevention of access to spawning grounds by obstacles placed in streams.

Reference has been made through the body of this Report to wasteful and destructive methods of securing fish either at ordinary times or at the spawning season. It is very encouraging to learn that in certain inland lakes, such as Scugog, Rice Lake and Lake Simcoe, where illegal fishing has been strictly put down, the improvement in Bass and Maskinongé, for which these waters were formerly distinguished, is very great. Large quantities of Bass are peddled by Indians in the country surrounding Rice Lake in exchange for flour and pork.

Explosives have been frequently employed in American waters—and their use is not unknown in Ontario—for killing fish in a wholesale fashion. It is said that the air-bladder is ruptured in fish killed in this way : obviously only a very small proportion of the fish killed or fatally injured are brought to market.

Again the use of pound-nets with a small $1\frac{1}{2}$ or 2 inch mesh in the pot secures countless immature fish of little or no market value, and the same may be said of the use of seines for herring, many immature Whitefish being captured, the surplus catch being used as manure when the market is glutted.

Sturgeon were formerly looked upon in Lake Erie as of so little value and were considered to such an extent as intruders in the pounds, that the fishermen were in the habit of bleeding them and allowing them to escape, the object being to keep the species off the fishing grounds. Spearing and grappling for them at spawning time and indeed spearing of any fish under such circumstances is properly regarded as one of the most destructive methods of fishing.

The respecting of a close season has done much to counteract depletion due to taking advantage of the comparatively helpless condition of fish at the spawning seasons.

The extent to which the various species expose themselves to capture is different, but the accounts we read of Ontario streams formerly blocked by Salmon at this time, and carted away in immense quantities convince us that the changes in the conditions of the streams are not entirely to blame for their total disappearance.

With regard to the destruction of spawning and feeding grounds by sawdust etc., and by decayed fish or offal, it is obvious that this source of injury to our fisheries is largely preventable. The enactments of the Dominion have already done much in putting an end to the former condition of affairs by which a fine river like the Ottonabee River, formerly celebrated for its Bass and Maskinongé, had its depth reduced from twelve feet to a few inches by accumulated sawdust, which is further distributed by spring freshets. It is not only in rivers that damage is done. Deposits of blackened and decomposing sawdust have been found miles out on the floor of the Great Lakes opposite rivers on which there are many saw mills, to the great detriment of favourite spawning and feeding beds of Whitefish.

This water-logged sawdust is also objectionable as forming a nucleus for sand-bars, interfering with navigation, but from the fisheries point of view the danger already noted, and the injuries to adult fish by the development of the gases of decomposition and by the floating sawdust getting into the gills of the fish cannot be exaggerated.

The consumption of mill-refuse is such an easily accomplished remedy that there is no excuse for the failure to carry it out. The Dominion law appears to be sufficiently explicit on the subject, but, as may be inferred from complaints from various parts of the country, requires to be better enforced.

Nor is there any excuse for the short-sighted policy of fishermen throwing overboard decayed fish or the offal of fish on the grounds; the occasional damage done by drifted nets and their putrid contents might probably be guarded against by more careful inspection of the nets, and attention to precautions against the floats becoming water-logged.

No doubt the presence of obstacles in streams preventing anadromous fish from reaching their spawning grounds has done much to divert fish elsewhere, or to prevent them accomplishing the function of reproduction at all. It is known that many fish are extremely sensitive in this way, the Sturgeon, for example, although ready to spawn, retaining its eggs after captivity.

The construction and maintaining of proper fish-ways is therefore absolutely necessary, and this can be effected so cheaply that there is no excuse for neglecting it when a dam is built. Various forms are in use, a recent one which promises well, being fed from the bottom instead of the top of the dam, and consisting of a series of vertical compartments communicating with each other and with the dam above and the stream below, by comparatively narrow apertures in a line with each other, the result being the gradual reduction of the height of the water in each compartment, and a continuous passage from stream to dam, the velocity of the current in which is easily overcome by the fish.

Close supervision of these various factors that favour the decrease of our food-fish will unquestionably have a most marked beneficial influence on the yield of our fisheries.

Apart from such remedies, aiming at preventing decrease of our food-fish supplies, there are others which aim at directly increasing them by artificial pond-culture and by fish-breeding. Both have given admirable results where they have been consistently prosecuted.

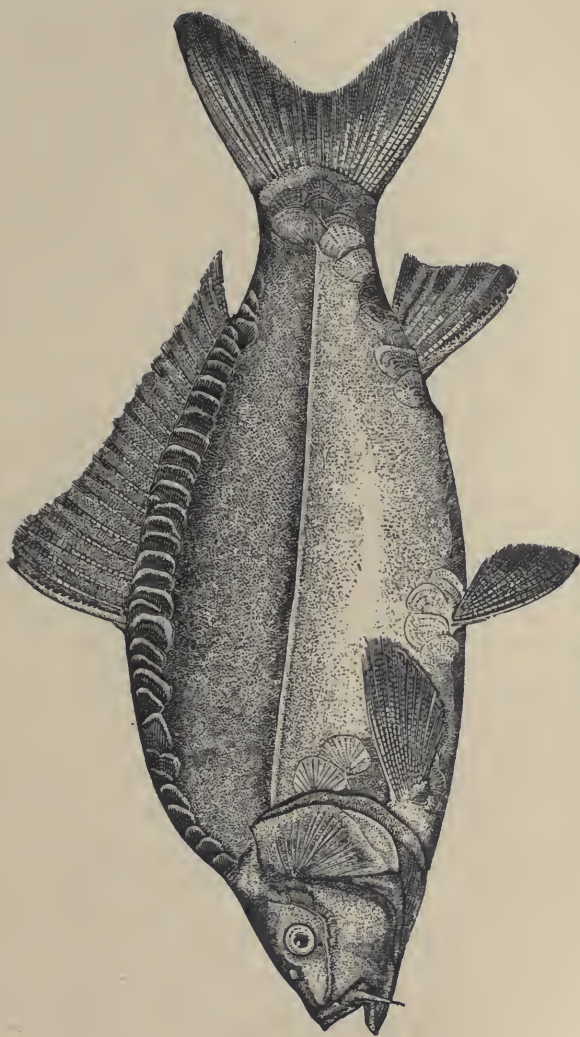
POND-CULTURE.

Under the above heading may be considered the artificial culture of Carp which has been conducted successfully for centuries in Europe, and has met with some favour in the United States.

The Carp is originally a native of Asia Minor and Persia, and has been for centuries before its introduction into Europe (1258 A.D.) a domestic fish, occupying somewhat the position that the pig does among mammals, at least in regard to its capacity for absorbing scraps.

Like all animals in a state of domestication it is extremely variable, and three well-marked races occur:—the full-scaled Carp, the Mirror Carp with scattered scales of large size, and the Leather Carp destitute of scales. The first mentioned may be regarded as approaching most nearly the original stock and are the most prolific; the last are the furthest removed from the original as to their coat, they are least prolific, but attain the largest size and fatten most rapidly. The Mirror Carp occupy an intermediate position in both respects.

They are very prolific, the females of the third and fourth year depositing from one to five hundred thousand eggs, when the water of the pond in which they have hibernated reaches a temperature of 63° F.



THE MIRROR CARP (*Cyprinus Carpio*).

While specially adapted for warm climates (they do not grow in weight materially in water of less than 48° F.) on account of their ability to stand warmer water than most fish, their culture is nevertheless prosecuted successfully in climates (Sweden for example) not very different from our own.

Special shallow ponds are arranged for the fry in which vegetable food is supplied for them by previously sowing clover; the larger fish, however, are fed on mixed animal and vegetable food, for example, chopped straw mixed with dried blood, etc. The winter pond is made seven feet deep, and in this no food requires to be provided as the fish neither feed nor grow there. They are in season from October till May, and they are always placed for a week before sale in a pond traversed by a current of running water to remove the muddy taste which all such bottom-feeding fish have when taken from the water. As they bring high prices in Europe, 16 to 20 cents a lb., their culture is attended with considerable profit; but the usual verdict of English speaking people on the subject of the Carp is that it is a tasteless fish, only fit to be a vehicle for sauces.

Various other foreign fish have been successfully introduced into North America, *e.g.* the European Brook Trout or Brown Trout, a fish which in some respects deserves more attention for culture purposes than our own Brook Trout, and again the California Mountain or Rainbow Trout (*Salmo irideus*), an exceedingly handsome species, is successfully hatched and introduced in the east.

One of the native fishes most adapted for pond culture is the Catfish (p. 442) which is not only prolific, but looks well after its young, all of which are hatched; it grows comparatively rapidly, is an omnivorous feeder, and fetches (where properly appreciated) high prices. One experimenter writes from the States that the culture of Catfish pays better than farming land and that peaty soil is very well fitted for it which would be unsuitable for agricultural purposes.

The merits of the Catfish as a pond fish have been recognized in California, where it has been introduced, also in various parts of Europe where societies interested have experimented with it.

FISH BREEDING.

Although pond-culture may prove a remedy for a deficient supply of food fish in places distant from natural sources, and although it may also greatly improve the yield of small natural lakes, yet the only efficient method for preventing the exhaustion of the food-supply from our inland waters is Fish-breeding on a large scale commensurate with the rate of artificial depletion due to the fisheries.

It has been noted above that great differences are observable between different species of fish as to the number of eggs deposited by them. It might be supposed that those species which are characterized by great fertility would eventually crowd out the less fertile species, but observation teaches that the latter are able to hold their own, a greater proportion of eggs arriving at maturity, generally because the young are exposed to fewer dangers. In fact in any body of water there is a certain natural balance of life, liable to slow natural changes, to which the rate of reproduction is in the case of each species closely adjusted. Artificial interference with this balance on a grand scale of the character of our fisheries must inevitably lead to depletion of the species sought after, for the rate of reproduction being already adjusted to natural conditions cannot at once alter to suit the new artificial condition. If, however, the proportion of eggs arriving at maturity can be artificially increased on a scale commensurate with the rate of depletion, then the danger of exhausting the fish-supply will be thereby obviated. This is the object of the artificial breeding of fish; it is evidently only possible with those species where the natural conditions of the development of the eggs are such that only a small proportion of them attain maturity and it consists in the artificial hatching out of such eggs, and the care of the fry till such time as they may be safely introduced into the waters to be stocked.

Many of the earliest experiments in this direction are due to the energy of Mr. Samuel Wilmott, of Newcastle, Ont., who, stimulated by the rapid disappearance of the Atlantic Salmon from Lake Ontario, endeavoured thus to prevent it. Much of the apparatus employed is also due to this gentleman's ingenuity, and has, during his official connection with the Fish-culture operations of the Dominion Government, undergone improvements which have led to highly successful results.

The earlier apparatus consisted of shallow hatching trays, over which a steady current of water was allowed to flow; these permitted readily the extraction of the dead eggs, the decomposition of which interfered with the development of their neighbours. Now glass incubating jars are in use which allow of an easy inspection of the progress of development, with better aeration by a constant current of water running through them. These are employed successfully for Whitefish, Lake Trout and other Salmonidæ, and are also used for the propagation of Shad by the U. S. Government. The jars are cylindrical with a hemispherical bottom; a metal cover, with two holes $\frac{5}{8}$ -inch in diameter for in-and-out-flow tubes, is screwed water-tight on the mouth by means of a rubber collar. Half-inch rubber tubing connects the inflow tubes with the constant water-supply, the pressure of which may vary with different kinds of eggs, but for the Salmonidæ a fall of six feet from a tank provided with a ball-cock (in the event of the water-pressure being high) suffices. The amount required per diem varies; for Whitefish eggs 4,000 gallons a day is ample.

The number of eggs which can be accommodated in a jar varies with the particular species—with recently gathered Whitefish eggs 3 quarts (108,000 eggs) are regarded as sufficient for a jar, but four or five quarts may be accommodated in the same jar when the eggs have become "eyed."

The amount of movement of the contained eggs can be readily controlled in such a jar by pushing the inlet tube further out or in; Whitefish eggs, *e.g.*, when first taken, are glutinous and require to be worked rapidly under a full current with the inlet tube pushed down. Dead eggs, on the other hand, can be removed by pushing the outlet tube down into the superficial layer of eggs. When the hatching time arrives and the embryos are freed from the egg-membranes, they pass out from the outlet tube into a glass receiving tank, the current outward being barely sufficient to induce the fish to swim out.

Whitefish embryos when first hatched are light gray in colour; they are dormant for two hours but then become quite active, more so than Salmon or Trout fry. The young may be fed on a paste made of $2\frac{1}{2}$ parts meal, $\frac{1}{2}$ blood, 6 water. Experiments are at present in progress on this phase of fish-breeding operations.

It is now very generally conceded that it would be advantageous to reserve the fry of Salmonidæ till they have attained to some considerable strength and size before being turned out. The trouble is to find suitable food as nearly related as possible to their ordinary food. An effort has been made in the South of France to overcome this difficulty by raising water fleas (*Daphnia* p. 437) in basins intended for the purpose. It has been possible by allowing such basins to dry up to kill out noxious insects; this desiccation, however, appears to be favourable to the winter-eggs of the *Daphnias*, which hatch out in enormous numbers on the ponds being subsequently flooded.

From the last report of Fish-breeding operations in Canada the following statistics relating to Ontario are extracted:—

There exist three hatcheries, the oldest one at Newcastle, where Mr. Samuel Wilmott made the first experiments and researches on this subject; the second at Sandwich; and a third recently erected at Ottawa as an experimental and educational station. The Newcastle hatchery is chiefly devoted to Lake and Brook Trout. The Lake Trout are secured in two pounds at Wiarton during November; and in 1890, 11,125,000 eggs were obtained from 3,222 female fish taken in the pounds.

It is interesting to note that there were captured at the same time 1,396 males—an indication of the relative abundance of the two sexes. Of the eggs thus obtained 4,700,000 were put out as fry; 1,500,000 in the Georgian Bay, 2,300,000 in Lake Ontario, and 450,000 in Lake Simcoe, while of the remainder 5,500,000 were sent elsewhere in the Dominion as semi-hatched or eyed eggs.

About 400,000 eggs of Brook Trout were secured, one-fourth of which were distributed as eyed eggs, the remainder placed in various streams and ponds as fry.

Of 2,750,000 Whitefish fry hatched out from eggs received from the Sandwich hatchery there were distributed to Lake Ontario (1,650,000), Georgian Bay (1,000,000), and Lake Simcoe (100,000).

The Sandwich hatchery deals chiefly with Whitefish and Pickerel eggs, the latter being hatched out in the spring after the Whitefish fry have been disposed of. Ninety million Whitefish eggs were obtained in the Detroit River, which is

exclusively reserved during the close season by the Government, and of these one-half were successfully hatched in 600 automatic glass incubators, thirty million being put out as fry, as follows:—

Lake Huron	2 million.
River and Lake St. Clair.....	5 “
Detroit River.....	10 “
Lake Erie	10 “
Lake Ontario.....	3 “

Of Pickerel eggs (*Stizostedion vitreum*) 32,000,000 were secured from Lake Huron and 22,000,000 fry placed out as follows:—

Lake Huron	2 million.
River and Lake St. Clair.....	4 “
Detroit River.....	10 “
Lake Erie	5 “

Reports amply show that these operations are already meeting with their reward, and indicate that a similar policy pursued by the Ontario Government with regard to the smaller inland waters would be followed by a rapid improvement of these as valuable sources of food.

CONCLUDING REMARKS.

It is obvious from many passages throughout this Report that there is abundant work for a permanent Fish Commission appointed under the Ontario Government.

Not only must our knowledge of the geographical distribution, habits, foods and enemies of our food-fishes be extended by a systematic survey of our waters, but a rigid and effective inspection of the fisheries must be introduced, and measures taken to counteract the decline in yield which is otherwise inevitable. The establishment of a Provincial Fish Hatchery is one of the most easily arranged of these measures, but there are problems of greater difficulty confronting the Commission connected with the control of the fisheries themselves.

While there is no difference of opinion as to the desirability of enforcing the laws against spearing and other illegal methods of fishing, there is considerable divergence as to the respective merits and demerits of pound-nets and gill-nets. These have been referred to on p. 464, but it is needless to say that the pound-net fishermen exaggerate the faults of the apparatus employed by the gill-net fishermen and *vice versa*. Unquestionably the multiplication of pounds has done much harm in interfering with the inshore migrations of the fish, an altered habit in this regard being noted since pounds were common; the use of small-meshed pots is also destructive, on account of the habit of immature Whitefish remaining in comparatively shallow water.

On the other hand drifted or unlifted nets with decaying fish must inevitably prove harmful to the fishing grounds, and while on the whole larger fish are secured by the gill-nets their condition is not so good as those taken from pounds.

It must be noted that the same size of mesh in a pound-net and a gill-net will secure very different sizes of fish, the meshes in the former being taut, in the latter loose, so that escape from the former is much easier than from the latter. An impartial consideration of the advantages and disadvantages of both methods of fishing will probably lead to the conclusion that both methods of fishing may under certain restrictions continue to be prosecuted without danger to the Fisheries.

Apart from rigidly limiting the number of pounds to be permitted, the leaders should be controlled in length, a considerable gap left between them and the shore, and only a single pot allowed. Above all the mesh of the pot should be such that immature whitefish may be able to escape. The general opinion is that this may be secured by employing netting for the pot, the mesh of which, after the tarring process, stretches to three and a-half inches. Experts announce that the number of whitefish to a barrel has been steadily on the increase of late years. If measures such as the above are adopted an improvement in this respect would inevitably follow.

Finally a strict inspection of pounds is necessary, especially during the close season, to prevent fish being pounded until after the season has expired.

Again, regulations with regard to the renewal of the seaming and of the stretching lines of gill-nets would go far to prevent damage done by drifted nets. It is probable that an increase in the size of the mesh of the pound-nets might be advantageously accompanied by the use of a five-inch mesh for whitefish gill-nets, and the imposition of a penalty for possessing or selling nets of illegal size would assist the objects of the Commission.

The latter regulation would not be complete without a similar penalty for possessing or selling immature fish, such as whitefish under two pounds or of black bass under one pound.

At present there is no doubt that large quantities of our game fish are netted or secured by other illegal means and shipped to the States. This is true of the magnificent Nepigon trout on the north shore of Lake Superior. It is asserted also with regard to bass which are caught by poachers in fyke-nets, and shipped covered over by less valuable fish.

It would not be a difficult task for the Commission to devise means to check such shipments. The outlay for adequate inspection to enforce the carrying out of the rules adopted would no doubt be considerable, but would speedily be repaid by the increase of the value of the Fisheries.

INDEX.

86-8786-87

					PAGE.
Table showing answers given on questions relating to Birds by witnesses from County of Frontenac.....					88-89
do	do	do	do	County of Grey ..	90
do	do	do	do	County of Haldimand.....	91-92
do	do	do	do	County of Hastings	93-94
do	do	do	do	County of Halton .	95
do	do	do	do	County of Haliburton	96
do	do	do	do	County of Kent ...	97-98
do	do	do	do	County of Lanark.	99
do	do	do	do	Counties of Lennox and Addington.	100
	do	do	do	County of Leeds..	101
do	do	do	do	County of Lincoln.	102
do	do	do	do	County of Lambton	103
do	do	do	do	State of Michigan, U.S.A.....	104
do	do	do	do	District of Muskoka	105-106
do	do	do	do	County of Middlesex	107-108
do	do	do	do	County of Northumberland ...	109
do	do	do	do	District of Nipissing	110
do	do	do	do	County of Norfolk.	111-112
do	do	do	do	County of Ontario.	113
do	do	do	do	County of Oxford .	114-115
do	do	do	do	County of Prince Edward	116
do	do	do	do	County of Peel ...	117
do	do	do	do	District of Parry Sound	118-119
do	do	do	do	County of Peterborough	120-121
do	do	do	do	Province of Quebec.	122
do	do	do	do	County of Renfrew.	123-124
do	do	do	do	County of Simcoe.	125-126
do	do	do	do	County of Victoria.	127-128
do	do	do	do	County of Welland.	129
do	do	do	do	County of Wellington	130-131
do	do	do	do	County of Wentworth	132
do	do	do	do	County of York ..	133-134
do	names and addresses of witnesses who answered questions on Fish.....				135-142
do	questions relating to Fish				144-146
do	names and addresses of persons who answered General Questions				147-155
do	how General Questions were answered by witnesses.				156-159
do	names and addresses of witnesses who answered questions on Animals other than Deer.....				160-168
do	how witnesses answered questions relating to Animals other than Deer				169-173

Table showing names and addresses of witnesses who answered questions to hotel and store-

	keepers	174
do	how questions to hotel and store-keepers were answered.....	175
do	names and addresses of witnesses who answered questions to railway managers...	176
do	how questions to railway managers were answered	177
do	names and addresses of persons who answered questions to railway conductors and pursers	178
do	how questions to conductors and pursers were answered	179
do	names and addresses of persons who answered questions to dealers in Fish and Game	180
do	how questions to dealers in Fish and Game were answered	181-182
do	names and addresses of persons who answered questions to dealers in guns and tackle	183
do	how questions to dealers in guns and tackle were answered	184
do	names and addresses of persons who answered questions to guides	185
do	how questions to guides were answered.....	186
do	names and addresses of persons who answered questions to boat and canoe builders.	187
do	how questions to boat and canoe builders were answered	188
do	Game Laws in force in Ontario at time Commission was issued	201-206
do	amendments made to above laws in 1892	207-213
do	Fishery Laws in force in Ontario at time Commission was issued	214-226
do	amendments made to above laws in 1892	227-231
do	Resolutions adopted at International Conference ..	234-295
do	values of various furs and skins found in Ontario.....	348

TREATISE ON THE GAME AND FUR-BEARING ANIMALS OF ONTARIO.

	PAGE.
Animals, game and fur-bearing, notes on papers relating to.....	315-316
Moose or European Elk, paper on.....	317-318
Wapiti or American Elk, paper on	319-320
Woodland Caribou, paper on	321
Virginia Deer, paper on.....	322-323
Black Bear, paper on.....	324
Wolf, paper on	325
Fox, paper on.....	326
Canada Lynx, paper on	327
Otter, paper on	328
Beaver, paper on.....	329-330
Fisher, Black Cat, Pekan, or Pennants Marten, paper on..	331
Sable or Marten, paper on.....	332
Mink, paper on	333
Wolverine, paper on	334
Skunk, paper on	335
Raccoon, paper on	336
Muskrat, paper on	337
Stoat or Ermine, paper on.....	338
Weasel, paper on.....	339
Canada Porcupine, paper on	340
Ground Hog or Wood Chuck, paper on	341
Northern Hare, White Rabbit, paper on	342
Wood Hare, Gray Rabbit, Cotton Tail, paper on.....	343
Flying Squirrel, paper on.....	344
Red Squirrel or Chickaree, paper on	345
Northern Gray Squirrel and Black Squirrel, paper on	346
Chipmunk, Striped Squirrel, paper on.....	347

TREATISE ON THE GAME BIRDS OF ONTARIO.

	PAGE.
Actodromus maculata	391
Aethya Americana	380
Aethya Vallisneria	379
Aix Sponsa	375
Anas Boschas	967
Anas obscura	368
Anatidæ	357
Anatinae	357-366
Anser albifrons Gambelli	364
Anserinae	357-360
Baldpate	375
Bartramia longicauda	396
Bartram's Tattler	396
Bernicla Canadensis	361
Bernicla Brenta	365
Bernicla Canadensis Hutchinsii	361
Bluebill	377
Bluebill, Little	378
Bluebill, Marsh	378
Bob-white	411
Bonasa umbellus, var. umbellus	406
Butterball	382
Canace Canadensis, var. Canadensis	405
Canace obscura, var. Richardsonii	404
Chen hyperboreus	362
Chen cerulescens	363
Chaulelasmus streperus	369
Charadrius Dominicus	400
Clangula Glaucion Americana	381
Clangula albeola	382
Coween ..	383
Curlew, Longbilled	397
Hudsonian, Shortbilled	398
Eskimo	399
Cygninae	357
Ducks	357-366
Duck, American Golden-eye	381
American Widgeon, Baldpate	371
American Black Scoter	384
Black, Black Mallard	368
Blue-winged Teal	373
Buffle-headed, Butterball	382
Canvasback	379
Cadwall, Gray	369
Green-winged Teal	374
Lesser Scaup, Little Bluebill	378
Longtailed, Old Squaw	383

Duck—Continued.	PAGE.
Pintail, Sprigtail	370
Redheaded	380
Ruddy, Spinetailed	386
Scaup, Bluebill	377
Shoveller, Spoonbill	372
Summer, Wood-duck	375
Velvet Scoter	385
<i>Dafila acuta</i>	370
Dowitcher	390
<i>Erismatura rubida</i>	386
<i>Fulix Marilla</i>	377
<i>Fulix affinis</i>	388
Glossary of technical terms	417
Gadwall	369
Gallinago Wilsoni	389
Geese	357, 360
Godwit, Hudsonian	393
Godwit, Marbled	392
Goose, American Whitefronted	364
Blue-winged	363
Brant	365
Canada	361
Hutchins	361
Laughing	364
Snow	362
Grass-snipe	391
Grouse, Canada	405
Richardson's Dusky	404
Sharptailed	408
Willow	409
Harelda hyemalis	383
Jack-snipe	391
Lagopus albus	409
Lagopus mutus, var. rupestris	410
Limosa fedoa	392
Limosa haemastica	393
Macrorhamphus griseus	390
Mallard	367
Mallard, Black	368
Mareca Americana	371
Melanetta velutina	385
Meleagris gallopavo, var. gallopavo	413
Nettion Carolinensis	374
Numenius borealis	399
Numenius Hudsonicus	398
Numenius longirostris	397
Oedemia Americana	384
Old Squaw	383
Old Wife	383
Olor Buccinator	359
Olor Columbianus	358
Ortyx Virginianus, var. Virginianus	411
Partridge	406-411
Partridge, Spruce	405

	PAGE
Pediocaetes phasianellus, var. phasianellus	408
Pheasant	406
Philohela minor	388
Pintail	370
Plover, American Golden	400
Plover, Field	396
Porzana Carolina	401
Ptarmigan, Rock	410
Ptarmigan, White	409
Quail	411
Querquedula discors	373
Rails	401
Rail, Carolina	401
Rail, King	402
Rail, Sora	401
Rallidæ	401
Rallus, elegans	402
Sandpiper, pectoral	391
Scolopacidae	387
Scoter, American Black	384
Scoter, Velvet	385
Short-billed Curlew	398
Short-neck	391
Shoveller	372
Snipe, Gray	390
Snipe, Redbreasted	390
Snipe, Wilson's	389
South-south-southerly	383
Spatula Clypeata	372
Spirit-duck	382
Spoonbill	372
Sprigtail	370
Spruce partridge	405
Swans	357
Swan, Trumpeter	359
Swan, Whistling	358
Table of migration of birds	353
Table of breeding seasons and migrations	354, 355
Teal, American Green-winged	374
Teal, Blue-winged	373
Telltale	394
Tetraonidæ	403
Topography of a bird	356
Totanus flavipes	395
Totanus melanoleucus	394
Turkey, wild	413
Upland Plover	396
Wavie	362
Wevois	362
Widgeon, American	371
Woodcock, American	388
Yellow-legs	395
Yellow-shanks, Greater	394
Yellow-shanks, Lesser	395

REPORT ON FISH.

	PAGE.
Letter of Transmittal	421
Geographical Considerations	423
Natural History of Fish in General	429
Natural History of Ontario Fish	439
The Fisheries of Ontario	457
Fishery Legislation	462
Apparatus employed in Catching Fish	464
Methods of preparation of fish for market	466
Decrease in number of fish—causes and remedies	468
Pond culture	470
Fish breeding	472
Concluding remarks	475

① 8757-A-889



LIBRARY
MINISTRY OF
NATURAL
RESOURCES



